

## Stop Dreaming and Sell

IT SEEMS to be popular these days to blame the present reduced state of private flying on lack of a suitable product. Build the perfect airplane, the critics are saying, and everything will then be all right with private flying.

One could hardly disagree that a better product at a mass-production price would be a boon to the private flying market, but we don't agree that the fate of private flying rests upon a 'perfect' product which may be built sometime in the future.

It is doubtful, in fact, that the 'perfect' private airplane will ever be built, but better airplanes will be built with an improvement ratio based upon production and sales of existing models.

Every major product in American life, from the automobile to the radio, vacuum cleaner, washing machine and television, was a pretty sorry piece of machinery to start with. Even today it could not be said that each of those products is 'perfect' in every respect. But each has been improved with each successive wave of production and sales. Better products come from the sales and use experiences of imperfect ones.

There was a time in its early stages when the automobile industry was regarded as a flop. It wasn't even recognized as a real industry. Its products not only were imperfect but under no stretch of the imagination were they considered suitable for the "average man."

Probably every good automobile designer fully realized the imperfections and limitations of his particular creation. Doubtless he dreamed of the day when his machine could be equipped with self-starters, four-wheel brakes, easy-to-change tires that wouldn't blow out every few miles, and might even be driven easily by the ladies. Probably every competent designer in the early automotive days could rattle off in double-quick time exactly what the ideal automobile would look and act like. But good automobiles didn't come over night or even in a few years.

Good automobiles and good radios and washing machines came because manufacturers with faith in an ultimate market pleaded and cajoled and lured the public into buying their products.



### TWA's Operations & Traffic Veterans

TWA veterans, John A. Collings, v.p.-operations (left), and E. O. (Oz) Cocke, v.p.-traffic, played important roles in the inauguration of transcontinental passenger service by predecessor company, Transcontinental Air Transport, on July 8, 1929. Collings was a pilot on the first service, while Cocke is credited with selling the first ticket. TWA next week commemorates the 20th anniversary of the transcontinental flight. (See page 25).

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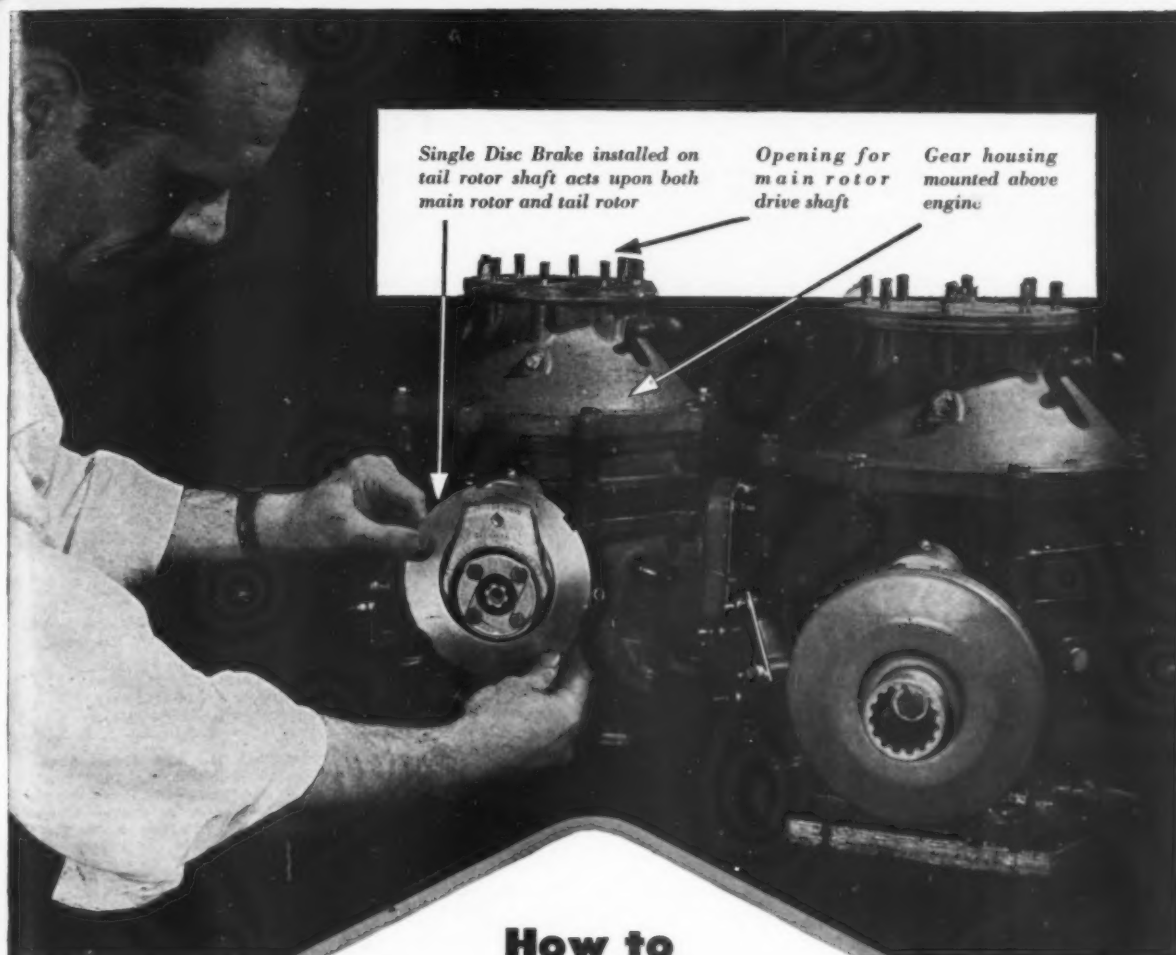
Lee Bowman, President, Bowman Flying Service, Inc., Keene Airport, Keene, N. H.



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*Opening for main rotor drive shaft*

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**MORE AIRCRAFT LAND ON GOODYEAR TIRES, TUBES, WHEELS AND BRAKES THAN ON ANY OTHER KIND**

## News in Brief

A 10% discount on official military travel will be offered by the domestic airlines starting July 1, in a move expected to increase annual revenues by \$6-\$8 millions. Considered a victory for the airlines is fact that the railroad agreement with the military during fiscal 1950 will not contain the usual "exclusive" clause. It is estimated that the discount will raise percentage of all military travel carried by air from present 2-4% to between 10-12%. Revenues, which have been \$2 millions annually from military sources, are expected to jump to \$8-\$10 millions. Airlines have established military bureau in Washington, with Frank Macklin as director, to handle new tariff and routing operations.

Net price of Douglas spare parts for DC-3, DC-4, and DC-6 transports is being cut 10%, effective July 4, for all orders received at Santa Monica plant, with certain retroactive features. Similar discount revision for purchases from Douglas European Division will be announced from Brussels shortly. Cooperation of airlines in improving inventory controls was important factor behind price cut.

U. S. airlines leasing 130 transports from War Assets Administration have been invited by WAA to purchase the planes at prices ranging from \$15,000 to \$20,000 for DC-3's and at flat price of \$125,000 each for DC-4's. Leases, which expire next March, are held by following carriers: Eastern, 21 DC-3's and 18 DC-4's; TWA, 24 DC-3's and 14 DC-4's; United, 23 DC-3's and 2 DC-4's. Other airlines have only DC-3's on lease as follows: Colonial, 1; Delta, 5; Hawaiian, 1; Mid-Continent, 5; Northwest, 7; Pan American, 9; Capital, 9; TACA, 4; Western, 3; Willis (non-scheduled), 2.

Hawaiian Airlines will reduce fares on July 1 to meet lower tariffs of Trans-Pacific Airlines which started scheduled service in the islands June 6. New HAL tariffs, in effect, will be return to fares charged before increase last year. TPA, then flying a charter service, did not raise its fares and then continued these same fares when it started scheduled service under its new certificate from CAB. HAL reductions from Honolulu to island points include: to Hilo, from \$15 to \$13.50; to Upolu, from \$11.50 to \$10.50; to Maui, from \$9.50 to \$8.50. TPA began service to all points on its system, except Lanai.

Helicopter Air Service plans to inaugurate air mail and air parcel post service between Chicago Municipal Airport and Chicago Post Office on July 23, and shortly thereafter between Chicago Municipal Airport and suburban towns. Company will use 6 Bell 47D's.

Southern Airways began service over its Memphis-Atlanta route, via Columbia, Miss., Tuscaloosa, Birmingham, and Gadsden, Ala., on June 10, using DC-3 equipment. Company bought 3 DC-3's from Continental Air Lines for \$45,000 each, plus \$5,000 worth of spare parts.

American Overseas Airlines has received its first Boeing Stratocruiser, which it plans to put in service between New York and London-Shannon on Aug. 17. Seven more are on order.

A veteran, desiring G.I. flight training, will be required to submit his own affidavit and two corroborating affidavits under terms of an amendment accepted by Senate Appropriations subcommittee last week. Amendment was offered by Sen. Elmer Thomas (D., Okla.) to meet objections of some committee members who felt that a single affidavit by the veteran, attesting to occupational purpose of the training, would not protect the government against the so-called "play-boy" type of applicant.

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1934—THE CHINA CLIPPER, first of the big Martin flying boats to fly the Pacific, was the first over-ocean luxury liner, confirmed the practicality of regularly scheduled over-ocean transport flights.



1937—THE MARINER LINE, begun in this year, had no peers in World War II as patrol bombers and search planes. And hundreds of Martin Mariners, including PBM-5 shown above, still serve the Navy.



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## BACKGROUND & TRENDS

### Among the Airlines

Latest airline merger talks involved **Continental Air Lines** and **Mid-Continent Airlines**. They were held within the past month, but neither company was able to accept the other's proposal . . . **Aerovias Braniff**, the Mexican subsidiary of Braniff Airways, is being liquidated following a decision of the Mexican Supreme Court upholding a decision of the Mexican Minister of Communications revoking Aerovias' route permits.

**Capital Airlines** had Vice President Alben Barkley as a passenger on its Chicago-Washington aircoach one night last month, and the next night carried Sen. Owen Brewster (R., Me.) . . . **Continental Air Lines** expects to convert all its DC-3's to the stair-door, 24-seat feeder type. **Capital**, which has about half its DC-3's converted, has postponed further work until fall. Reason: it doesn't want planes out of service during summer traffic peak.

David L. Behncke, president of the Air Line Pilots Association, has indicated that all ALPA pilots have returned to work for **National Airlines**, although several grievances growing out of the strike settlement agreement have not yet been resolved.

Signs of better financial days for airlines: **American Airlines** for first four months of 1949 reports profit of \$839,466, compared with loss of \$4,682,509 in comparable period last year; **TWA** had net profit of \$749,234 in April, the figure being almost evenly divided between domestic and international operations; **Northwest's** May profit of \$524,661 contrasted with net loss of \$22,030 in same month last year.

### Notes on Senate Airline Inquiry

Senate Interstate and Foreign Commerce committee's inquiry into the financial condition of the airlines, which got underway on April 11, is drawing to a close. Sen. Edwin C. Johnson (D., Colo.), chairman, says at least three bills will be reported out as a result of evidence that has been obtained. One is S. 8, recreating the independent air safety board; second is S.J. 92 to authorize appropriation of \$300,000 to permit CAB to make a study of separation of air mail service pay from subsidy, and the third is S. 237, prototype aircraft bill. There may also be a bill setting a date by which CAB must separate pay and subsidy.

The committee was somewhat surprised to note that **Robert F. Six**, president of **Continental Air Lines**, had received a \$15,000 bonus last year along with his \$29,791 salary. Six explained that the bonus had nothing to do with operation of the airline and hadn't figured in mail rate cases. It came from operation of the wartime bomber modification plant at Denver, and the airline's directors had agreed to pay him a bonus after all accounts had been settled, he said.

**Trans-Texas Airways** was apparently the only company smart enough to point out to the committee that it was contributing to national defense by operating into, and helping keep available and in shape, several fields that had been built during the war. Six, who was testifying at the time, admitted that apparently the airlines had overlooked an important point.

### Comet Ahead of Schedule

The deHavilland 109 Comet, British transport powered by four Ghost jets and expected to cruise at about 490 mph, will probably fly in August, several months ahead of schedule. It's Britain's big hope in the transport field.

### Penniless Post Office

The Post Office Dept. has no money to pay the domestic airlines for carrying the mail for part of April, and all of May and June. The situation is putting the squeeze on some carriers, especially small feederlines, one of which has \$100,000 coming that it could put to good use right now. Reason there is no money is because Congress didn't include air mail funds in the Second Deficiency bill. After this bill had gone through the House, CAB granted rate increases, including large lump sum payments for TWA, United, American and other lines. The PO, with funds practically exhausted, tried to get \$16,100,000 added in the Senate, but didn't succeed. P O now has requested funds from the House Appropriations Committee.

### All-Cargo Certificates Not Effective

Temporary air freight certificates tentatively awarded to four all-cargo carriers in the Air Freight Case Decision did not become effective June 24, as stated in the certificates themselves, because of a provision in CAB's order accompanying the decision. The order specifically provided that proposed actions would be stayed until CAB disposed of any exceptions to the decision by interested parties. The scheduled carriers presented numerous exceptions to the decision in oral argument last month, and CAB is free to move as rapidly or slowly as it wishes in making a final decision in the case.

### Favorable Publicity

Airline men who have bemoaned the unfavorable publicity the industry has received in newspapers and magazines since the war were pleased to see Wesley Price's favorable story in the June 11 *Saturday Evening Post* ("How to Stop Air Travelers From Squawking") on how **United Air Lines** became a "one division airline" with everything run from Denver. Wes Price is now gathering material for a story on J. H. "Slim" Carmichael, president of Capital Airlines.

### People

**C. E. Woolman**, president of Delta Air Lines, took his first real vacation in a long time and went on a 17-day air tour of Scandinavia, France and England. He was accompanied by **Wayne W. Parrish**, editor and publisher of American Aviation Publications. They visited Scandinavian Airlines System, ABA Swedish Air Lines, DNL Norwegian Air Lines and the SAAB aircraft plant, and also flew DNL's North Cape route to the Arctic region . . . **Roy Martin**, Under Second Assistant Postmaster General, retired June 30. Well known and liked in airline circles, Martin had been with the Post Office Dept. 39 years . . . Under Secretary of Defense **Stephen Early** was appointed National Military Establishment representative on the Air Coordinating Committee, replacing Air Force and Navy representatives.

**Gordon Gilmore**, director of public relations for TWA, has been named chairman of Air Transport Association's public relations advisory committee, replacing **Richard Rummel**, United Air Lines' publicity director, who has served in the job two years.

**C. C. Pearson** has resigned as v.p. of Curtiss-Wright Corp. He plans to remain in the aviation industry but has not announced a new affiliation.



## ANNOUNCING WORLD'S LARGEST PRODUCTION PROPELLER

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PROPELLER DIVISION, CALDWELL, N. J.



# CURTISS ELECTRIC PROPELLERS



## EDITORIAL

(CONTINUED FROM PAGE 1)

fect products. And this, we think, is the crux of today's private flying problems. Dreaming of a 'perfect' airplane isn't going to solve anything. Today's product is a pretty good one. There is a fairly substantial market available. What's needed is some salesmanship based on faith in today's product and faith in a better product to be made possible by sales of today's models. Crying in one's beer that today's product is lousy is an admission of lack of faith—an alibi of weakness and laziness.

But along with salesmanship must go a little common sense. At some point in history there was a pretty good market in iron shackles which were bought by gentlemen who believed their women-folks should be securely tied up during their absences from home. But a manufacturer who tried to sell such shackles today would find his only market in museums. People just aren't buying iron shackles. By the same token there is no use trying to sell airplanes to people who could not conceivably have any practical use for them. All too often the aviation industry has confused the public's avid curiosity about airplanes with an actual market. Only a small percentage of the public comprised an actual market for automobiles in 1904 and by the same token only a relatively small segment of the public today comprises a market for today's airplanes.

The important thing is that there is a sufficient available market for airplanes today to begin to give the industry some stature and some hope. There are ample tools to work with if a little common sense is used in analyzing the prospects. If today's conception of an ideal airplane were available right now we doubt if miracles would happen in the private flying field because there is only one road to the development of a large market. That road is selling and improving, selling and improving, and more selling and improving.

Look at the tools available today. Most important of all, the use of the private or light airplane is an *accepted fact* in American industry and this vastly significant factor was not present in the prewar years. Secondly, the use of the lightplane for ranching and agriculture has greatly increased since before the war. In both these categories the lightplane has moved from the novelty or experimental field into routine use and both these categories comprise a healthy solvent market.

And there are other tools. Feeder airlines will now be using single-engined equipment. Air mail star routes are in the offing. The Army Field Forces are completely sold on the essential use of lightplanes (a factor entirely missing before the war). And the flying club market has never been fully exploited. Shedding tears because a white collar worker who only has one or two days off a week can't land a lightplane in the tennis court around the corner from his apartment house in the middle of a metropolitan city isn't the way to capitalize on the markets that are available today for today's airplanes.

The other day we received a letter from an old-time operator and airplane salesman. He had this to say about the need for salesmanship in the lightplane industry:

"The operator is as important to the manufacturer as the general manager, the sales manager or the workers on the assembly line. It is the operator (sales agent) who must dig up the business to feed the production line and keep it going. If he fails to produce this essential business in sufficient quantity, the production slows and stops—exactly as it would if the workers walked off their jobs, and with the same devastating effect on the manufacturer.

"Since the operator is so important, as a sales agent, it is hard to understand how a manufacturer can become so alarmed over a strike threat and yet show such little concern over a slowdown or stoppage 'from a lack of sales'—as evidenced by the absence of any effort whatsoever on their part to insure against such slowdowns and stoppages, by working on the only thing that can prevent it—the sales organization. They spend millions creating big production systems but appropriate not one red cent toward the training and development of a sales organization.

"To fulfill his job the operator-sales agent needs specialized training. He needs directive leadership in developing and employing known sales principles and practices to airplane sales work. He needs proper use of the important tools of advertising and public relations. He needs help—period."

All this makes good sense, we think. The local operator must be given help. Merchandising and salesmanship must be directed to the actual existing and available markets and not to that part of the public which has no use and need for today's types of airplanes. This is no time for crying over the beer—it's the time for selling and improving.

## Medieval Toll Gate

In medieval times a brigand parading under the title of prince or count or some other titled camouflage kept his personal treasury well stocked by building a castle fortress overlooking a narrow river passage or mountain pass. He exacted tribute from all who passed by and usually there was no alternative but to pay up. Through the centuries individuals and countries have had to recognize public rights to strategic and necessary trade routes. Gander Airport in Newfoundland is an essential airway stop with today's airplanes. There is just no way of avoiding a refueling stop in Newfoundland on most flights. That is the sole justification of Gander's existence. It is, in effect, a public trust and public convenience.

Not long ago Newfoundland became a Province of Canada. The Canadians wasted no time in exacting tribute. They used the refueling stop of Gander as a lever to force a new Canadian-U. S. bilateral air agreement. Without even having to discuss the sad results of the new agreement, the basis for bargaining was as phony, as medieval and as black a blotch, as the tribute exacted by a prince from all those passing his castle on the Rhine.

WAYNE W. PARRISH.

AMERICAN AVIATION





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## Equipment Interchange Problems:

# Standardization of Transport Cockpits Faces Early Action

By WILLIAM D. PERREAULT

A proposed Civil Air Regulation that would require cockpit standardization in transport airplanes is now being reviewed by the Civil Aeronautics Board and is expected to be circulated for industry consideration and comment shortly.

CAB's activity in this field has been stimulated by the report on the Berlin Airlift operation submitted by staff pilot Robert V. Garrett and by implications of equipment interchanges which are now cropping up on a major scale. Garrett has been sitting in on the Army-Navy subcommittee studying cockpit standardization and, along with CAA member J. E. Boudwin, has requested associate status on the committee.

The AN subcommittee did not accept this proposal because its basic charter does not permit representation outside of the military. As a result, considerable duplication of effort is being made by ANC committee 16 which is working on parallel studies but with civil representation through CAA's Boudwin. The printed recommendations of both groups are apt to play a vital part in the final CAR.

When? The real questions posed by

such a regulation deal with the time of application. If the regulation calls for standardization on future aircraft, it will pose a relatively small problem. If, as reports indicate, it requires changes in service airplanes to bring about instrument panel standardization and changes in control identification, considerable confusion and hardship is certain.

**The Record.** Referring to the equipment interchange program as carried on by Delta and TWA, CAA's chief of flight operations reported to CAB: "Admittedly we do not believe safety is being served in the same capacity as could be expected if the operation were conducted in a normal or one-carrier fashion." This report, submitted as public counsel exhibit No. 5 in the reopened docket, continued on to say that one of the "most difficult problems" involved in interchanges "which has a very definite affect on safety" is the qualification or retention of qualification of pilots.

This is but one interchange and involves a relatively small operation. CAB has already approved an equipment interchange between Pan American and Panagra and between Capital

Airlines and National. On the dockets seeking approval are interchanges between Eastern and Delta, TWA and Delta, National and Pan American, Delta and Chicago and Southern, National and Eastern, American and Delta. Equipment involved includes Douglas DC-3's, DC-4's and DC-6's.

Equipment interchanges should be distinguished from "trackage rights." With "trackage rights" the airplanes and crews of one airline fly over the route of another airline. In equipment interchanges the pilots of airline "A" fly the equipment of airline "B" over the routes of airline "B." This calls for the requirement that the pilot be equally familiar with the equipment, airways procedures, communications practices, etc., of both airlines, unless the equipment interchange point is also a crew change station and the crews are not permitted to fly both route segments. The most apparent purpose of such agreements is the establishment of through routes without super-imposing new carrier activity over existing operations.

**Weak Points.** With this wide variety of interchanges approved and pending approval, it is interesting to note another paragraph of the CAA report on the Delta-TWA interchange. "The matter of flight dispatching is also a matter of no small consequence when safety of operation is considered. The route in this case is so short that little difficulty from a dispatch standpoint should be experienced. However, problems of communications, familiarity with fuel loads and coordination of flight move-



**Not Yet—** If standardization were being effected in the newer transport cockpits, it would be encouraging for the future, but this is not the case. Shown above are two of the three cockpit arrangements which will be used on the Boeing 377 by the three U. S. airlines operating this equipment. PAA's is at the left and features an extensive flight

engineer's panel while the United Air Lines version (right) is basically a two-man cockpit arrangement with the flight engineer using pilot controls and relatively few designated for his use. Manufacturers have always claimed that this type of non-standardization costs the airlines millions of dollars in the procurement of new equipment.



ment are very real and would undoubtedly be a problem much more acute if operations were permitted on other route sections."

**ALPA's View.** What do the airline pilots feel about the equipment interchange program? Editorially, the *Air Line Pilot*, official organ of ALPA, commented, "... interchange of equipment from one airline to another is hazardous due to variables in the instrumentation and controls within the cockpit and plane performance because of the individualism of the respective airlines which has never permitted standardization, and for a number of other good and sufficient reasons . . ."

"An airline piloting crew stepping from the cockpit of one airplane on one airline to the cockpit of another airplane on another airline with an instrumentation arrangement and other technical operational control paraphernalia, which are different and diversified, is a hazard which can not be looked upon lightly and which affects very greatly the operation of a complex airplane . . ."

Everyone wants standardization—to his own personal specification. There are few, if any, transports that have not had complete new instrument panels installed in the postwar period. This represented a rare chance to bring about standardization. The fact that standardization, even within some of the individual airlines, failed to develop, is an indication of the need for greater incentive than mere opportunity. Considering that CAA and CAB are engaged in a joint effort to minimize regulations by substituting generalized rules of good practice, a regulation of the type proposed here appears to be a drastic step.

**Possible Breakdown.** ALPA states that the DC-6 cockpit contains approximately 500 instruments, switches, control buttons and controls. Whatever the figure, it does seem that multiplying the existing problems by interchange of equipment between airlines deserves careful consideration.

Training can do wonders for avoiding costly and repetitive errors. Training can increase the pilot's knowledge.

But the question remains as to where, at what point, does the demand exceed the capacity? If the average pilot within the airline group can carry out the change in airplanes effectively, what about the below average pilot whom seniority or choice will place on the routes in concern? This is where the breakdown can occur, according to the experts.

**Corrective Action.** Training is being used to put the pilots in the best possible condition to handle interchanges effectively. Apparently, CAB intends that cockpit standardization be drafted to assure further a higher standard of safety in this and routine operations. The time element involved in drafting a regulation which will be accepted by the industry and the accomplishment of any portion of those changes is very great, probably a matter of several years.

True cockpit standardization is not a simple matter. Studies have shown that in a group of pilots of the same physical height, there is a difference in arm reach of as much as eight inches. In the same group the sitting height varies by as much as six inches and leg lengths vary accordingly. In some items such as rudder pedal action this variation can be accommodated but what about switch location, lighting designs, control throws, etc.?

**Starting Point.** The point where the maximum return can be obtained in standardization (with minimum effort while a long-range program is being drafted) is in the standardization of principle control functions and operating procedures. There appears to be no logical reason why in some DC-3's the fuel mixture control is in idle cut-off position in one extreme while in another, it is exactly opposite.

The control pedestal mechanism which on one DC-3 operates a cross-feed valve, in another group closes the fire wall shut off valves, stopping all fluid flow to the engine at the firewall. The wing de-icer control in one series is a rotary control on the bulkhead behind the pilot while on another series it is a push-pull control operated vertically

from a floor position. In many DC-3's the props are feathered by use of hydraulic oil set in motion by manual operation of controls mounted behind and above the pilot's head while in others, simple buttons on the control panel accomplish the same task with engine oil.

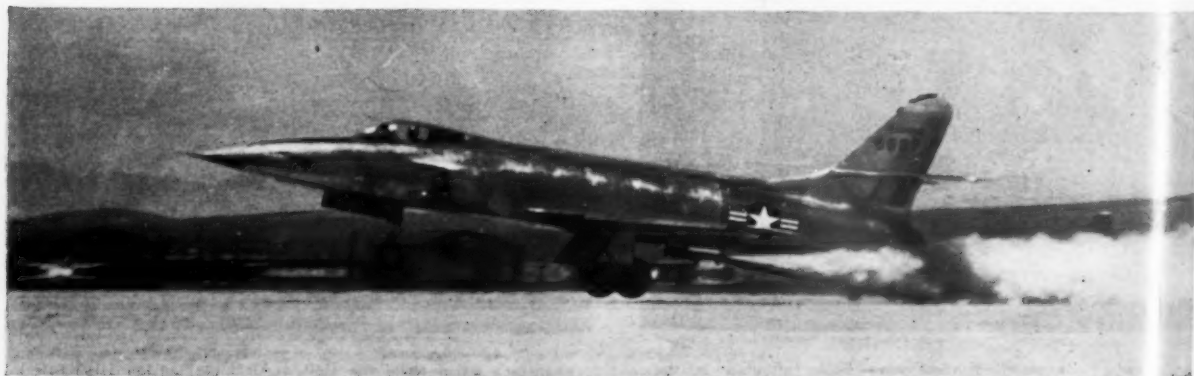
On the DC-4's some airplanes have flare controls mounted in the position where others mount their fuel dump valve controls. Some have single row, nine cylinder Wright engines while the majority have twin-row, 14-cylinder P&W engines. Even those having P&W engines have major differences in operating procedures and these are reflected in even more serious variations in allowable gross take-off weights.

Each of the changes represent progress. They do not represent joint planning which could provide order where there is now chaos. No one group is free from fault. Possibly 99% of the non-standardization of instrument panels and cockpit lighting is the result of attempting to please individual pilot whims. But pilots are not designers nor engineers. We must look to the latter groups to set down standards which will meet operational needs and design limitations. To this end, CAB's proposed CAR may serve a useful purpose but it is not unmatched in private industry's activity. The Society of Automotive Engineers and the airlines, through the Air Transport Association, are also working actively on plans to further cockpit standardization.

## Saint Appointed to ANTC Post

Sam Saint, 10-year pilot with American Airlines, on June 24 was appointed director of the Air Navigation and Traffic Control Unit of ATA.

Air Transport Association's navigation and traffic control activities are being expanded as an important step in the long-range contribution which the scheduled airlines plan to make to this program.



**XF-90's First Flight**—The latest thing in Air Force penetration fighters, Lockheed's XF-90, is shown here taking off on its first test flight at Muroc Air Force Base, Calif. Aerojet JATO auxiliary rockets were used on the first flight

but they will not be standard. Normal power is supplied by two Westinghouse J-34 jet engines of 3,000 lbs. thrust each. The original design called for two 1,000 lb. rockets in the tail for rapid take-off and climb, but they were eliminated in the "X" model.



Decision Due July 6:

# Proxies Determine Outcome Of Fairchild Executive Fight

By JAMES J. HAGGERTY, JR.

A civil war within the aircraft industry will reach a climax on July 6 at Hagerstown, Md., when the stockholders of Fairchild Engine and Airplane Corp. gather to decide who will guide the future destinies of the company—the present management, headed by J. Carlton Ward, Jr., chairman of the board, and L. B. Richardson, president, or a new slate of officers and directors proposed by Sherman M. Fairchild, founder of the company, and his Committee of Stockholders.

Proxy" started on April 13, 1948, when the board of directors voted to provide Ward with a \$32,500 per year retirement pension, to go to his wife in the event of his death.

Sherman Fairchild immediately stepped in with a protest: the stockholders had not been given the opportunity to ratify the retirement benefits, despite the fact that they were voted only two weeks before proxy statements for the 1948 annual meeting were mailed. Fairchild also stated that the growth of the company was not due to Ward's efforts, but the products it had turned

could only fight a delaying action, by preventing a quorum at the annual meeting. He asked stockholders by mail to withhold their proxies from the management—or, if they had already forwarded them, to revoke them—and by this action was able to kill the first scheduled annual meeting on April 27. The management postponed the meeting until May 11 and urged stockholders to forward their proxies—but again Fairchild's delaying action was successful and again the meeting was killed.

The management now realized it had to negotiate, so they approached the founder with an offer—they would give him as much time as he needed to organize an opposition slate, but he must agree in turn to permit the shares he controlled to be represented at the next meeting so that a quorum could be obtained. Fairchild agreed, and the date for the final annual meeting was set for July 6.

In early June, Fairchild's cause was



J. Carlton Ward



L. B. Richardson



Sherman Fairchild



R. S. Boutelle

Main contestants in the lively tussle for management control of FEAC.

Sherman M. Fairchild wants to oust the present management because, he says, the company is being run for the advantage of a small inside clique (meaning Ward and his directors) rather than for the best interests of the more than 10,000 company stockholders.

He charges that the directors are subservient to Ward; that they are devoted to individual retirement benefits and bonuses, rather than to dividends; that they pass on major company commitments without giving the stockholders details of what the commitments entail; and that they have hidden post-war losses of three divisions from the stockholders.

The management counter-charges that Fairchild's real purpose in raising these issues is to regain control of the corporation he once headed. Further, they state, the only two unprofitable years in the corporation's history were two pre-war years when Fairchild was controlling the company, while under the Ward management FEAC has been singularly successful, one of only four companies which reported profits for the post-war years.

out; further, that Ward had been well paid for his service with FEAC and a pension was not required.

Ward had been paid in salaries, Fairchild pointed out, a total of \$745,094 from 1940-47—only about \$100,000 less than the total dividends paid.

In May, 1948, Fairchild wrote to the directors pointing out the cost of Ward's retirement to the company. Later, in meetings with a committee of the directors, he produced elaborate studies as to the relative size of FEAC in the aircraft manufacturing field and a comparison of Ward's salary with that of other top executives. As a result of his efforts, in December, 1948, the directors voted a reduction of the retirement pay to \$25,000 per year.

Fairchild, however, was still not satisfied. Early in 1949 he started a postcard poll, in which stockholders were asked to register their opinions of the Ward contract by return postcard. From the response, Fairchild decided he had enough support to start a proxy battle, with the intent of ousting the management and supplanting it with a new board of directors.

strengthened by an announcement from R. S. "Dick" Boutelle, FEAC vice-president and general manager of Fairchild Aircraft Division, the largest and most profitable of FEAC's seven divisions, that he would stand for election as a member of the opposition slate. He was immediately relieved of his assignment as general manager. Arthur F. Flood, comptroller of the Aircraft Division, who had been with the company for more than 20 years, followed with a similar announcement, and was also dismissed from his FAD duties.

On June 22, Sherman Fairchild's group received a boost from a new source. Nineteen "second line" executives of the Fairchild Aircraft Division released a statement supporting in principle the cause of their former boss, "Dick" Boutelle. Boutelle and Flood, said the executives who were risking their jobs by such a statement, had been "primarily responsible for the production and profit record of the division." Any permanent loss of Boutelle and Flood would "seriously impair the effectiveness of the division," they said.

Richardson countered the statement with a charge that it had been instigated by the Fairchild group; a

Proxy Fight. The "Battle of the

Delaying Action. At first Fairchild

spokesman for the executives said, however, that it had been handed to Boutelle on June 7 with a recommendation that he use it in seeking proxies, but that he had declined, fearing that it might cost the signers their jobs.

**Opposition Slate.** In addition to Boutelle, Flood and Fairchild, the others who will stand for election with the opposition slate are: Grover Loening, NACA consultant; J. A. Allis, New York banker; L. M. W. Bolton, industrial consultant; E. Ainsworth Eyre, personal investment manager; A. L. Baker, general manager of the Kellogg Corp., atomic energy installation engineers; William D. McIntyre, executive vice president of Monroe Auto Equipment Corp.; Frank R. Nichols, president of Nichols Wire and Aluminum Co.; and Charles H. Colvin, vice-president of G. M. Giannini & Co.

In mid-June the management threw its Sunday punch in the "Battle of the Proxy"; Ward's retirement benefits, the chief issue of controversy, were withdrawn from his contract. Thus, the management said, the main issue was removed, and the only question left was whether the successful Ward management would continue to run the company or whether Fairchild would resume control.

Fairchild countered with a statement that the pension plan had been only one of several issues, recounting those mentioned previously. Further, he said, he sought no control of the company; he would not be either an officer or chairman of the board if his fight was successful.

Both teams are now fighting to obtain proxies, button-holing stockholders to tell their respective cases against each other. There are 2,308,810 shares of FEAC stock outstanding; however, there is no estimate of how many it will take to win, since no one knows how many of the shares will go unvoted. The Ward group had a little less than 900,000 shares at the last meeting; Fairchild is keeping mum on his total.

## Spin Tests Eliminated As Certificate Requirement

Recovery from spins has been eliminated as a requirement for pilot certificate applicants by amendment of CAR parts 20 and 43.

In place of instruction in spin recovery, student pilots will be required to demonstrate proficiency in recovery from power-on and power-off stalls entered into from all normal flight attitudes.

Since the records show that accidents following spins are a major cause of light plane accidents, elimination of this requirement is expected to increase the lightplane safety record and promote the interests of manufacturers in building, and the schools in using, spin-proof airplanes.



**Hiller Helicopter Line**—Photo shows final assembly of Hiller 360 helicopters at United Helicopters' plant at Palo Alto, Calif. Deliveries are now being made at the rate of three a week.

## Dramamine--New Weapon for Airsickness

At least four airlines are now using Dramamine to ease motion sickness among passengers. Capital Airlines has adopted it for full scale use as a substitute for previous drugs while United, Delta and American are using it in limited tests. Extensive military tests are underway and CAA has conducted preliminary tests of the drug.

Dramamine, the tests indicate, is an effective preventive and cure for motion sickness. It certainly parallels the best known existing drugs and may exceed their curative powers. It will take many months of testing under varied conditions to definitely prove effectiveness beyond the level of certain of the newer drugs.

First information regarding the effect of Dramamine on motion sickness was discovered by coincidence. G. D. Searle and Co., of Chicago, submitted the drug to the Allergy Clinic of the Johns Hopkins University and Hospital for evaluation as a cure for hay fever and parallel allergies. One of the patients reported a life-time susceptibility to motion sickness disappeared along with the allergy.

Conclusive tests of drug effects are difficult to perform. One of the most distorting factors is the mental reaction of the patient. The ordinary patient feels that there should be a reaction to the pill or capsule, in which form the drug is administered. Consequently, he proceeds to have "suitable" reaction. Sometimes patients experience miraculous cures or take to shaking physically when actually they have only been given a placebo.

**Sugar Pills.** The placebo is a pill of milk sugar, bread flour, etc., which resembles the drug in appearance but which is known to have no physical effect. In treating test groups for any drug such as Dramamine, certain of the patients are given placebos while others are given the curative. In this manner it is possible to chart the mental

reactions which are separate from curative powers of the drug.

In tests of controlled groups using both placebo and Dramamine, considerable data have been obtained. Aboard the U. S. transport "General Ballou," Dramamine gave relief to 372 of 389 cases of seasickness encountered. In tests by the USAF School of Aviation Medicine, Dramamine-treated patients also fared well. In flight tests during which unusual maneuvering was used to promote complete sickness, 28.7% of those given Dramamine became ill as opposed to 55.6% among those given a placebo.

CAA's preliminary studies indicated that certain side effects of Dramamine may prove important. Of particular interest to CAA was the fact that the drug caused drowsiness in some instances. Because of this, CAA issued a bulletin on June 23 warning pilots not to use the new drug until further tests have been completed.

## Babb Surveys Scandia Transport Market in U. S.

Activity to interest U. S. operators in the Scandia is now underway with The Babb Co. conducting a survey to determine the potential market in this country. W. E. Larned, superintendent of flying for United Air Lines, has been in Sweden for the express purpose of looking over the twin engine transport.

Indications that R. Wahrgren, president of SAAB, is interested in licensing a U. S. manufacturer to build the ship were confirmed by talks between R. E. Gross, president of Lockheed, and Wahrgren. Lockheed decided against taking on additional designs at this time but it is expected that a favorable survey among U. S. operators might influence Lockheed to act on the proposal.

# Too Much Humbug in Airline Personnel Tests, Critic Says

*(The views in this article on airline personnel testing are those of an ex-airline man considered to be a qualified critic. While some observations are caustic, the writer holds himself a sincere friend of the airlines and offers a constructive program for successful testing. Reader comments are invited.—The Editors.)*

Among airline people, any discussion of aptitude tests and other psychological measurements usually evokes mixed attitudes which range from a naive belief in magic, hocus-pocus formulae to an outright, arbitrary rejection of tests as mere "nonsense."

Typical is the supervisor who says, "Oh, I suppose they're all right, if you're nuts, or something like that. But I don't see much point in using tests for hiring airline folks; I can size up a good applicant better than a lot of foolish questions can."

Many supposedly well-informed managers believe that it is futile to use any device which purports to measure human capacities for various kinds of work. This opinion is apparently based on the fallacious argument that intangibles cannot be seen, therefore cannot be measured. Most of the others, noticing the apparent widespread failure of tests as instruments of airline personnel administration, just don't take them very seriously.

There appears little doubt that psychological testing among airlines has thus far been largely unsuccessful. But instead of discarding entire testing programs as inherently worthless, it might be wise first to examine the plausible proposition that tests haven't yet been given the opportunity to prove themselves, one way or the other.

**Too Much Neglect.** A prime obstacle has often been top-level policy (or the lack of it). Industrial psychologists and airline executives have, generally, failed to get together in mutual appreciation of each other's functions. Understandable but rather smugly regarding themselves as professional men, the psychologists, with the exception of this writer (who was not hired as a psychologist), have not felt it necessary, in the interest of learning personnel and job requirements, to soil their hands on a few thousand pounds of cargo, or to handle a few irate oversales themselves. And management, always preoccupied with this emergency and that crisis, has tended to ignore less dramatic but nonetheless serious personnel developments within its own ranks.

To some executives, "employee relation" consists of hiring expensive legal talent to deal with the labor problems which have been festering because so few have yet had the vision to use psycho-

logical talent. Over-simplifying a field about which they know little, these wheels have tended to write off personnel administration as just so much "counseling," or as a promotional kind of sales activity in which a company school-spirit is constantly sloganized in employee publications, contests and the like.

This is all very nice; but such half-policies ignore basic employee psychology and seriously curtail brass-tacks procedures like testing, simply by failing to take them seriously. In these days of union demands, excessive payrolls and social security laws, it is time that airlines begin thinking scientifically about their employees, as do other industries.

**Reason for Failures.** These faulty attitudes become apparent from a glance at a few of our so-called testing experts. There is at least one personnel manager whose only qualification for his job is company loyalty. This man, proving incompetent as an operations manager, was kicked upstairs—more accurately, across the hall—to a little, record-keeping, paper-shuffling personnel office, where he rubber-stamps payroll authorizations and periodically distributes company service pins. His personnel department abandoned testing after a brief, half-

hearted attempt with half of the employees in half of the offices on half of the system. Test results were filed and forgotten.

A very large airline at one time entrusted its entire testing administration and policy to a Miss Mary Jane Something-or-other, who had gone to college and taken Psych I-A. Another big outfit had a personnel set-up in one local office in which all testing and interviewing for the traffic and operations departments were conducted by one girl, who had been a war-time supervisor in a small reservations office. This young lady happened to have a college degree—in, of all things, Home Economics!

It is perhaps unkind to disparage Mary Jane and her contemporary the Home Ec major. But it is hardly realistic to expect that untutored femininity is sufficient by itself to sell psychological testing to hard-bitten station managers, communications supervisors, maintenance foremen, pilots and the like.

One company did, it is true, employ a professional psychologist. Although he was primarily a clinical, rather than an industrial psychologist and possessed only sketchy knowledge of the intricacies of airline operation and management, he nonetheless began producing some real results.

About 90% of the staff of one of the traffic offices of this company is comprised of employees hired under his testing program. The passenger service and general efficiency of these employees are far superior to the performance of the untested employees of a locally competing airline. This comparison is a considered opinion, based on unsolicited

## Program for Personnel Testing

Briefly, the necessary steps to successful testing are as follows:

(1) **Management must realize** that personnel turnover, morale and efficiency are not mere phenomena, to be helplessly observed, like the weather; they are symptoms, significant and controllable.

(2) **Qualified psychologists** must be available to explain to supervisors the meaning of tests, traits and individual differences. "Management" must realize that the human beings in "management" differ from "labor" only in degree, not in kind. "Labor" must be shown that tests, which help them as well as "management," do not deserve their sneers. This sort of teaching need not be expensive or formal; but a serious and understanding attitude must be consistently communicated through all employee levels.

(3) **From job analysis**, traits required for all jobs must be determined; from this, in turn, suitable tests can be selected. In this changing airline business, this analysis need not be as intensive nor as expensive as in other industries; but it must be sufficiently extensive to embrace all jobs.

(4) **The testing program** must be complete. This means that all candidates for promotion as well as all applicants must be tested; it means that testing must embrace all departments, all offices and all locations; all appropriate tests must be administered. Practical, qualifying test scores must be set up, then understood, and especially, rigidly adhered to in all cases.

(5) **Before-and-after statistics** should be accumulated over a definite and appreciable interval, for the purpose of showing the effect of testing on personnel turnover, efficiency, morale, accident rate—and whether or not payroll money is being saved.



comments offered over a period of several months by most of the department store buyers in this particular locality.

Yet, despite this and other indications of the value of testing, the psychologist lost his job when the first of several retrenchment booms was lowered. His testing and training program was discontinued for the announced reason that it was too expensive. Nobody seems to have realized, however, that the lion's share of this expense was the training, not the testing. Legal brains have since supplanted psychological ones in this, an upper-bracket airline.

**Meaningless Ceremony.** As might be expected, tests are frequently meaningless ceremonies. An applicant will take an employment test, either "fail" it or "pass" it—and then be hired anyway, if the supervisor happens to like him.

One general office manager, disappointed in a preferred applicant's failure to reach a qualifying score in an intelligence test, actually gave him the same test again the next day on the basis of the applicant's statement that he hadn't felt well when he first took the test. What the supervisor didn't know was that the prospective employee had meanwhile gained access to an additional copy of the test and, with the help of one of his brighter friends, had "boned up" for the retest.

A psychologist would have made certain that the job-seeker "felt well" during the first test; he would never have permitted a retake of the identical test after so short an interval; even if this had happened, he would certainly have spotted something quite phony in the second test's much higher score. But our untrained supervisor was completely fooled into hiring the employee (who was, incidentally, discharged a few months later, after soaking up several hundred dollars of the company's hard-earned payroll money).

A carefully devised rating system, used by trained supervisors who take it seriously, can be a truly valuable measurement; but as kicked around by several companies, the rating scale has degenerated into little better than a high school slam sheet, to be handed from supervisor to supervisor throughout the employee's so-called career. At best they are scraps of paper, containing meaningless and vague supervisory opinions.

**Lack of Understanding.** Another obstacle to successful testing is, apparently, a lack of perception of fundamental psychology which, in turn, leads to misunderstanding of the proper function of testing. Psychology, unlike other valid sciences, is a very personal sort of subject, closely interwoven into everyone's daily life. Hence too many people, otherwise hesitant to set themselves up as amateur chemists, economists or physicists, are not the least bit bashful in their sweeping, positive statements about psychology, a subject which they have casually mastered from scattered personal observations and biased

wish-thinking, instead of from impersonal analysis and scientific method.

Following the human tendency to classify everything and everybody into convenient pigeonholes, the amateur psychologist thinks of people in terms of neatly-packaged, mutually-exclusive—and quite inaccurate—"types" (the introvert, the extrovert, the criminal type, the traffic man, the operations man). It smacks of some sort of managerial snobbery to separate entire groups of employees in this way, to fail to perceive that individuals differ widely from each other, not in "types," but in the amount and distribution of the traits that they possess.

There are other peculiar notions, too. Confusing terms like ability, aptitude, knowledge and capacity, many believe that intelligence, for example, is something you catch from going to college, something that grows with experience. Actually, intelligence is the capacity for learning new things and adjusting to new situations by using previously gained knowledge. Although knowledge may increase, the capacity, for all practical purposes, does not. It is thus quite probable that there are several junior agents now learning the business who are brighter than any given number of airline presidents.

Other traits, like mechanical aptitude, clerical ability, and memory are different from intelligence and from each other; but all are similar in that they are native aptitudes, not acquired abilities—inborn, virtually unchangeable capacities, which the average airline supervisor can rarely estimate, even with reasonable accuracy, in an interview.

Tests are incomparably better than other employment and promotion "standards"—the capricious decision in an employment interview; the biased and cursory opinion of a single executive; little things which make or break entire careers.

**Basis for Success.** Lack of comprehension of traits, aptitudes and tests is complicated by still another deficiency: the failure to perceive which of these many traits make for success in certain jobs. How many supervisors, watching their ticket agents, reservationists, loads agents and dispatch agents at work, have noticed how highly specialized agent work is nowadays in comparison with the old five-hat days, when one man worked tickets, clearance, communications, ramp, and even maintenance? How many, feeling that perhaps agents themselves have changed, have tried to determine just what it is that makes some present-day agents fail in their work?

Most people think that it's stupidity; others believe that it is simply not liking the work and not trying very hard. Few, if any, have offered the interesting theory that an unsuccessful agent may be too intelligent as well as deficient in clerical ability; that the sum total of the other and more complex

traits which make him temperamentally unsuited for detail work under pressure may also equip him for other duties on a higher level of responsibility. Maybe; and maybe not.

Without scientific job analysis, these different opinions are just that—unproved theories. And so, although we don't know what we're looking for, we give our tests anyway—or we don't give them at all; we just hire the best looking or the most enthusiastic and, months later, wonder why there are so many misfits, hot deal boys, eager beavers, spinners, grippers and habitual overloaders. We also notice many good agents who, strangely, fail to develop into good supervisors.

Finally, if we're really open-minded, we begin to toy with the fantastic idea that maybe some of the "misfits" should be supervising, while the supervisors work the trips and sell the tickets. Whether it hurts our feelings or not, these are the things that should be tested; but first we have to know just what these things consist of.

**Captains or Plane Drivers?** Take pilots, for example. Intelligence is probably the chief trait distinguishing the ideal airline captain from mere plane drivers. Yet, although physical and sensory attainments of pilot applicants are tested thoroughly—as they should be—intelligence is somehow ignored.

The average pilot is a high-calibre man because, fortunately for airlines, there happens to be a small, indirect relationship between intelligence and things like height, weight, depth perception, reaction time and other aspects of general physical condition. But since this is all too often not the case, we occasionally hire an applicant who will perhaps never fully understand or cooperate with, for example, basic clearance procedure, or a new and complicated traffic control plan.

In other words, a future captain whose habit patterns and ego will sooner or later prove insufficient to handle some new and unexpected emergency, perhaps aloft. This observer, and probably several readers, can name actual examples who are perhaps still flying scheduled runs. Despite the defensive and spurious arguments of pilot groups, these inadequacies can be and must be spotted and screened in the hiring procedure by means of standardized, reliable, impartial and un-arbitrary intelligence tests.

We could go on and on. There's the district manager who insists that traffic managers—managers, mind you—should have no more taste or capacity for detail work and planning than the street representatives they supervise. He and other "type" psychologists may be right; but several, including this observer, disagree with him. And that's the point: as long as there remains such widespread confusion on the question of ideal human traits, it seems futile to condemn tests for failing to measure the things that we can neither define, nor decide upon.



# French Aircraft Industry Shows Erratic Progress

(The following evaluation of the recent Paris Air Show was made especially for American Aviation by a competent observer of the display.—The Editors).

It was easy to accept a superficial view of the Paris flying display at Orly on May 14, as reported by some aviation trade publications, that French recovery is making important strides in civil and military aviation.

Closer analysis, however, confirms impressions formed two months ago that the French aviation effort lacks cohesion and the Union Syndicale des Industries Aeronautiques is not the central driving force it should be; consequently there is little teamwork.

The result is that instead of a properly balanced series of products, ranging from the smallest to the largest, and covering all main classes of aircraft, the French have progressed a great deal more in some classes of aircraft than others.

Their strategic and tactical military aircraft are virtually non-existent in all sizes. In the civil class there is unnecessary duplication of 100,000-lb. freighter aircraft the NC 211 Cormoran and the Breguet 761—neither of which are altogether suitable for passenger carrying. Thus, there is nothing effective between the S.O. 30P Bretagne (29,500 lbs.) and the 160,850-lb. S. E. 2010 Armagnac.

**ICAO Performance.** There is no sign of any decline in the Dakota class of aircraft among European scheduled and non-scheduled carriers, so the Bretagne could still find a market. Its main competitors are the British Viking and the Saab Scandia. The French must remember, however, that carriers now want ICAO performance, which is difficult to meet with two engines in this size, and operators may soon find it preferable to move into the 45,000-lb. class where twin engined equipment like the Convair and the Ambassador pay a smaller price in payload for ICAO security.

The S.E. 2010, however, is the one French aircraft with a future; this is the only aircraft of its class which has flown in Europe. French lead is unchallenged since no British project is known to be under development and so, even if the British laid down a competitor this year (which in view of their other commitments is unlikely), the French could still enjoy a lead of about three years.

Countries in the Old World seem con-

demned to a shortage of dollars for an indefinite period ahead and the 160,000-lb. transport is here to stay. So the S.E. 2010 was a smart move by the French. Only one factor could prevent the French offering world carriers a fine aircraft for which dollars are not required, and that is if they fail to continue developing the aircraft or if their production hesitates.

**Production a Problem.** In America and Britain the production of an aircraft is a routine job and there is never any doubt of the outcome. In France however, this happy state of affairs does not exist, and the French people find that getting an aircraft of any size into production is just as difficult, in fact more so, than evolving the prototype. The French are a Latin race and they like the thrill of starting a fine new project. The humdrum task of following up the design has always been a nightmare to them.

With experience of the Stratocruiser and Constitution in America and the Brabazon in Britain, it is the view of many observers that the French have a tough job to produce S.E. 2010 transports. Anybody would have a tough job, and the French, because of their temperament, will find it just that much more difficult. Probably the way to get production is for the Government to step in and treat it like a military operation from which there can be no retreat. The ordinary happy-go-lucky French methods could easily lose them a fine prize and the French people

themselves must decide that they just cannot fall down.

**Other Civil Types.** Besides these two major projects there are a number of other non-descript civil types. The SCAN 30 is a Widgeon built under a license agreement from Grumman. This amphibian has promise but it is up against two competitors, one is the British Short Sealand and the other is the Italian Piaggio P.136, also at the show. Here again the French might do business if they can turn out the aircraft because the Sealand is far from developed and although the Italian is a more luxurious job it is expensive and lacks the long experience which is embodied in the Grumman design. It always comes back to the same story in France—can they produce them?

Other twins included the Norazur 2100 twin engined trainer, the C. M. 100 transport, the Dassault 315 and the S.O. 95 Corse. None of these showed any international promise.

**Helicopters.** In no class of aviation has the French mentality showed itself so strongly as in the helicopter field. The French were evidently lured into imagining that this type of aircraft can be built in a garage or back garden. The result is that of all the projects which the French are known to be working on, only one design could be trusted to fly at Orly. This was the S.E. 3101, an experimental bag of tricks of no possible commercial value.

The French and the British started off after the war together with no previous experience (wartime helicopters were developed in America as agreed by the allies). Now after a few years the British were able to show only the highly developed Bristol 171 and a British built aircraft by Westland to Sikorsky S-51 license using a British Alvis engine. Both these are available now, both are in production and both



FROM DISPLAY to production is big problem for French industry.

# Bendix Products

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have accumulated running time to justify their being used for public transportation.

The lesson is that with relatively meager resources in Europe you have to be phlegmatic to build a helicopter that can be trusted.

The French have a wide range of light aircraft which include the S.O. 7060 Deauville, the S.I.P.A. 901 and the fantastic experimental H.D. 10 with an aspect ratio of 32.5! Chord of this wing is 16 inches, span is 40 feet. This aircraft has been built to find out the lift characteristics of the very high aspect ratio wing with the bracing strut used as an auxiliary lifting surface.

**Little Military Progress.** So much for the civil type. On the military side the lack of progress makes it clear that France, for many years to come, will contribute little or nothing of value to Western Union air defense and offense in the way of aircraft. For an indefinite period ahead the French will have to use British Vampires for defense and they may have to buy English Electric A.1. jet bombers for offense over short/medium ranges. The French have made the great mistake of trying to run before they can walk in the design of fighters.

Superficially the fine swept wings flashing through the air look advanced but the French are a very long way from producing a defense weapon. The Triton is only a trainer and can be disregarded. The Espadon S.O. 6020 and the twin engined N. 1071 are also useless.

The most encouraging French jet aircraft is the Dassault 450 Ouragon. All these aircraft are powered by French-built Rolls-Royce Nene jet engines of 5000 lb. static thrust. The best course for the French is to put everything they have into development of the Ouragon and try to make this a good fighter.

The wing loading looks a little too high for defense above 40,000 feet but if they persevere with this design and not try to build something better this aircraft might be a real contribution to Western Union in a few years.

French bombers appear to have been overlooked in the present program. There are various designs but, in any case, the French are handicapped by lack of a powerful enough jet engine and unless they obtain a license for the Rolls-Royce Tay or Avon they will have to build a bomber with, say, six Nenes which will be a clumsy design.

French Naval aircraft have been entirely overlooked. The fact that Russia is a land force is not a valid excuse to neglect this arm. It is difficult to know what the French can do at this point.

For the moment they are wise to order British Naval Attacker fighters for use on their carrier which was once one of the British Light Fleet Carriers. They would probably do well to obtain a building license for the Attacker or the Hawker Sea Fury. They may



**Pipe Cleaners**—This unusually good shot of the augmentor tubes used in the exhaust system of the P&W engines on the Convair Liner was taken during maintenance operations at Schiphol Airport in Amsterdam. The KLM mechanics shown here are cleaning out the augmentors to reduce maintenance on the tubes. Carbon spots on the tube, if allowed to collect, glow hot while exhaust gases are passing through the augmentor and eventually burn through. By keeping the augmentor tubes clean through daily sweeping, maintenance is kept to a minimum.

laugh at the idea of building a piston engined machine like the Sea Fury but the Dutch are doing just this because they know that the Navy fighter is an unbelievably difficult box of tricks to construct and the only way to get the know-how is to copy a successful design.

The lesson of this show is that the French must put their back into aircraft construction if they want to gain their rightful place in aviation. The only way to do this is by hard slogging and by copying the designs of others. Britain neglected many types of aircraft during the war and had to turn to American designs—and even then it has taken five years to get the knack. The French must do the same. There is no short cut.

## **Bartow Patent Problems Stop CAA Lighting Projects**

CAA has suspended all lighting projects covered by the Federal Airport Aid program pending the outcome of investigations into patent problems which have recently arisen. In a letter to the New Bedford (Mass.) Airport, CAA said, "It seems that installation of a runway lighting system may infringe upon certain patents and it is the clarification of the matter that is holding up such installations.

Due to this order, we shall not authorize award of any contracts for run-

way lighting projects until the situation is cleared. We hope it will take no longer than three weeks."

The patent difficulties referred to are understood to be the result of royalty fees which the Welsbach Corp., new license holders of the J. B. Bartow lighting patents, is seeking to impose on all runway lighting covered by the patents.

Until recently J. B. Bartow was retained by the Line Material Co. as a consultant. The company paid royalties on runway lighting units of their manufacture, to insure patent protection. When this relationship was terminated the Welsbach Corp. obtained the patent rights and established the royalty system based on a given cost per lighted runway foot. This would raise the initial cost of runway lighting installations a considerable amount.

## **Court Closes Airport Until Planes are 'Noiseless'**

Operations at the Turlock Airport, Turlock Cal., have been stopped by a court order issued by Superior Court Judge H. L. Chamberlain.

"Until such time as airplane motors are used generally which do not make noise and propellers are used which are soundless, it would be impractical to permit further use of the Turlock Airport," he explained.

More than a score of residents had asked an injunction against the airport, plus damages totaling \$265,000, claiming that noise and dust from the privately-owned airport created such a nuisance that they were compelled to flee their homes on week ends and holidays. Furthermore, they said, their livestock and poultry were upset by the plane noises. The judge granted the injunction and awarded damages of \$500 to each of three families.

## **Off-Loaded Passenger Loses Case Against EAL**

A passenger off-loaded by an airline at a point other than his destination because of conditions over which the airline does not have control has no redress if the tariff rules of the carrier are incorporated into the fare tariff, U. S. District Judge D. J. Wyzanski ruled last month in a case in New York.

The case was that of Chester W. Mack vs. Eastern Air Lines. Mack had purchased a ticket on EAL from Boston to Washington and was off-loaded at La Guardia Airport when the airline was advised of emergency conditions at Washington National Airport. Eastern offered to reimburse him for a one-way fare between New York and Washington, but Mack demanded reimbursement for the full fare and funds for hotel lodging. Eastern refused and the case went to court. The judge ruled there were no grounds for recovery.



## Resort Airlines Wins Air Tour Approval

After President Truman had reversed an unfavorable decision and forced the granting of a five-year certificate to Resort Airlines, Inc., to operate foreign and overseas all-expense tours, the Civil Aeronautics Board on June 10 reopened the "Skycruise Case" to reconsider Resort's application for domestic routes and American Air Export and Import Co.'s application for foreign and domestic routes.

The Board said it felt the previously rejected applications should be re-examined in the light of the President's action in reversing the decision CAB sent to the White House last February in the Resort overseas case. The President said his reversal was prompted by "reasons affecting our relations with foreign countries and in the interest of our national security."

The temporary certificate awarded to Resort permits it to operate all-expense conducted air tours between specific points in the U. S. and points in Mexico, the Caribbean Area, South American and Canada.

**Routes Authorized.** Resort had contended in its application that the certificated airlines were not interested in developing such business, preferring to carry passengers on their scheduled services.

The routes on which Resort is now authorized to conduct tours are as follows

(1) Between the co-terminal points New York, Philadelphia, Washington, Pittsburgh, Cleveland, Detroit, Chicago and Miami, and the intermediate points Mexico City, Guatemala City, Merida, Havana, Nassau, Ciudad Trujillo, Port-au-Prince, San Juan, St. Thomas, St. Croix, St. Johns, Martinique, Port-of-Spain, Caracas, Willemstad, Curacao and Kingston-Montego, and:

(2) Between the co-terminal points New York, Philadelphia, Washington, Pittsburgh, Cleveland, Detroit and Chicago, and the intermediate points Ottawa, Montreal, St. Jovite, Mont Joli, Moncton, Charlottetown, St. Johns (Newfoundland), Halifax and Yarmouth (Nova Scotia), and St. John, New Brunswick.

Resort Airlines has its headquarters at Pinehurst, N. C. It owns three DC-3's but probably will acquire additional equipment. L. C. Burwell, Jr., is president.

## Bonanza Air Lines Gets Reno-Phoenix

Major beneficiaries of CAB's decision in the Additional California-Nevada Service Case will be Southwest Airways, which gets several additional route points and several skip-stop authorizations, and Bonanza Air Lines,



**Combination Counter**—This experimental ticket counter has been constructed by United Air Lines at Denver's Stapleton Airfield. It combines teletype, telephones, cash box and ticket compartments in one unit. The unit is 6½ ft. long, 2½ ft. wide and 4 ft. high. A recess on the right side contains a teletype machine. If it proves successful, the new counter will be placed in additional terminals along the airline's routes, according to D. F. Magarrell, United's v.p.-passenger service.

Inc., of Las Vegas, which was designated for a three-year feederline certificate conditional upon certain showings.

All other applications in the case were either deferred or denied by the June 17 decision, except that Trans World Airline was authorized to carry local mail between Las Vegas and Los Angeles and United Air Lines was allowed to serve Reno on the Seattle-San Diego segment of its route system.

Bonanza, which presently operates scheduled intrastate service between Las Vegas and Reno, will get the Phoenix-Reno route certificate after making a showing of its financial ability to operate the route and after completing arrangements for the acquisition of TWA's Phoenix-Las Vegas and Phoenix-Boulder City route authorizations.

TWA had applied for permission to sell the Phoenix-Las Vegas segment to Arizona Airways, but CAB said the public interest would be better served if local air service between Phoenix and Las Vegas be provided in conjunction with Las Vegas-Reno service by Bonanza rather than by Arizona. The Board held that traffic potential of the route is too light to support two feederlines.

Intermediate stops Bonanza is authorized to serve between Reno and Phoenix are Carson City-Minden, Hawthorne, Tonopah, Death Valley (on a seasonal basis), Las Vegas, Boulder City, Kingman and Prescott.

**SWA Awards.** Southwest was granted additional route points, got permission to use Long Beach as a co-terminal

with Los Angeles and Burbank, and was required to serve only four intermediate points on flights between the Los Angeles and San Francisco areas and only three intermediates on flights north from Sacramento or the Bay Area to Medford, Ore.

Additional points granted SWA were Paso Robles, Crescent City and Oroville, and other points were added to its system by designating Santa Cruz as Santa Cruz-Watsonville, Vallejo as Vallejo-Napa, Eureka as Eureka-Arcata and Dunsmuir as Dunsmuir-Mt. Shasta.

## Standard's Operating Rights Revoked for Violations

Standard Airlines, an irregular transcontinental carrier, was accused by CAB of "bold, flagrant and persistent disregard" of the Civil Aeronautics Act on June 21. The Board ordered revocation of the airline's Letter of Registration and has asked the Department of Justice to begin a criminal proceeding.

CAB said the flagrancy of Standard's violations, held to have been committed between June 10, 1947, and September 20, 1948, impelled it to ask the Dept. of Justice to bring criminal proceedings under Section 902 of the Act. Conviction could result in a maximum fine of \$500 for the first offense and \$2,000 for any subsequent offense, with each day of continued violation constituting a separate offense.

The Board opinion held that Standard, although fully aware of what Economic Regulation 292.1 permitted, had operated "irregular" transcontinental flights so



frequently as to disregard the requirements of the law entirely.

Citing numerous warnings from CAB staff members to Standard, the Board said it was clear that Standard "had complete knowledge of the requirements and limitations placed upon its operations as an irregular air carrier, and that this is not a case where inadvertent violations were committed by unsuspecting individuals despite their best efforts to comply with the necessary requirements."

Standard's headquarters are at Long Beach, Calif. Its chief officers are Stanley Weiss, president, and James Fischgrund, vice president. The revocation takes effect July 20.

## 6 Non-Operating Feeders Miss CAB's July 1 Deadline

Six certificated but non-operating feederlines were expected to miss the July 1 deadline the CAB had set as the date by which they should start operating or face possible loss of their certificates, but it was regarded likely that at least three or four of them would be allowed a grace period.

Carriers named in the Board's Mar. 22 order setting the July 1 date were Arizona Airways (1,020 route miles), Central Airlines (1,308 route miles), Iowa Airplane Co. (1,259 miles), Parks Air Lines (4,003 miles), Roscoe Turner Aeronautical Corp., (655 miles), and Yellow Cab Co. of Cleveland (local passenger helicopter authorization).

As of last week, none of the six had started operations, but all this meant was that CAB now had authority to act at once to cancel such certificates as it thought might not be implemented within a reasonable time, or to go along for an additional period of weeks or

months with those lines seen to be making earnest efforts to get started.

**More Time Likely.** Almost certain of grace periods were two carriers currently involved in matters awaiting Board action. A hearing on the proposed acquisition of the Parks certificate and routes by Mid-Continent Airlines had been set for July 18, but has been postponed to permit Board action on petitions of Braniff Airways and Eastern Air Lines to set aside the acquisition case and to re-open proceedings in which Parks was awarded its routes.

Also before the Board was a proposal for the transfer of Roscoe Turner Aeronautical Corp.'s certificate to Turner Airlines, Inc., a new corporation claiming to have sufficient capital to implement the certificate.

At least one of the other four lines, Central, presumably is rushing preparations for the start of service over its routes, since it is known to be negotiating for the purchase of a fleet of Beech Bonanzas and Ryan Navions. A recent CAB order permitting the use of single-engine aircraft in commercial transportation of passengers under certain restrictions gave Central the break it had been needing by enabling it to acquire single-engine planes instead of the much more expensive multi-engine transports.

Nothing had been heard in Washington from Arizona Airways or Iowa Airplane Co., but it was altogether possible that they would be able to do the same thing Central is doing. With no helicopter suitable for commercial transport operations likely to be available for some time to come, Yellow Cab of Cleveland apparently stood a slim chance of getting started within a reasonable time.

## Travel Laundry Problem Bows to Nylon

Ralph Damon, president of TWA, tried something on his recent 25-day international trip that may lead to a revolution in air travel. Men who have burdened themselves with baggage on such trips and who have been moving around so fast that laundry becomes a major problem may have the answer to their worries.

Damon's solution involved the use of nylon shirts and nylon underwear, which can be washed, dried and ready to wear again within a couple of hours. No ironing necessary. He credited Warren Lee Pierson, TWA board chairman, with giving him the idea. Pierson has also used the nylon garments on long trips.

For 25 days Damon was on the move, visiting TWA stations all the way from the U. S. to Bombay, India. All but three nights were spent in hotels. No time for laundry. He carried two nylon shirts and two sets of nylon under-

wear. Each night at a hotel, he washed out the shirt and underwear he had been wearing, hung them up to dry, and always had clean clothes on hand.

"I carried three or four regular shirts for 'state occasions,'" he said, "but two of them were still clean when I got back." He couldn't estimate what his wearing apparel weighed when he left the U. S. "I was carrying far too much," he stated, explaining that he had 35 lbs. of baggage (international travelers are allowed 66 lbs.) but that included a movie camera, still camera, film, business papers and other articles. He carried the 35 lbs. in two suitcases, the idea being that one suitcase would be used to handle the knickknacks he purchased overseas.

Without such miscellaneous items as cameras, etc., a man can now travel for an indefinite period of time with a very few pounds of personal baggage, Damon pointed out. And, he added, it's the only way to travel.

## CAB CALENDAR

**July 1**—Hearing on application of Linea Aeropostal Venezolana (LAV) for a Venezuela-Havana-Miami-New York-Montreal Foreign Air Carrier Permit. (Docket 3751). 10 a. m., Room 1011, Temporary Bldg. No. 5, Washington, D. C. Examiner Richard A. Walsh.

**July 11**—Hearing on applications of Val Air Lines and Trans-Texas Airways proposing service to points in Texas. (Dockets 3645 and 3367). Tentative. Place and hour to be announced. Examiner R. Vernon Radcliffe. Postponed from June 28.

**July 18**—Hearing on extension of term of Pioneer Air Lines certificate and suspension of certain points of American Airlines, Braniff Airways, and Continental Air Lines. (Docket 3719). Tentative. Place and hour to be announced. Examiner James M. Verner.

## Aviation Calendar

**July 1-4**—Air Force Association annual convention, Chicago.

**July 1-4**—National Air Fair, Orchard Airport, Chicago.

**July 2-4**—Houston International Airspeed Run, Laport Municipal Airport, Houston.

**July 2-10**—16th National Soaring Contest, Elmira, N. Y.

**July 6**—Joint meeting, Institute of the Aeronautical Sciences and Soaring Society of America, Elmira, N. Y.

**July 10-13**—National Ass'n of University Administrators of Aviation Education annual meeting, Kent State Univ., Kent, Ohio.

**July 19-21**—NASAO Board of Directors, Grand Hotel, Mackinac Island, Mich.

**July 20-21**—I. A. S. Annual Summer meeting, I. A. S. Bldg., Los Angeles.

**Aug. 23-26**—National Flying Farmers convention, Ft. Collins, Colo.

**Aug. 26-29**—Airlines Medical Directors Association 7th annual meeting, Hotel Statler, New York.

**Aug. 29-Sept. 1**—Aero Medical Association 20th annual meeting, Statler Hotel, N. Y.

**Sept. 2-5**—National Air Races, Cleveland.

**Sept. 6-8**—Annual spark plug and ignition conference sponsored by Champion, Hotel Secor, Toledo, O.

**Sept. 9-12**—Instrument Society of America maintenance clinic, Statler Hotel, St. Louis.

**Sept. 12-16**—Instrument Society of America convention, St. Louis.

**Oct. 5-8**—SAE 1949 National Aeronautic Meeting and Aircraft Engineering Display, Biltmore Hotel, Los Angeles.

**Oct. 12-15**—Air Reserve Assn. convention, Long Beach, Calif.

**Oct. 30-Nov. 2**—NASAO Annual Convention, New Orleans, La.

**Oct. 30**—Third Annual Air Fair, San Francisco Airport. (Junior Chamber of Commerce auspices.)

**Nov. 9-10**—Aviation Distributors and Manufacturers Ass'n annual meeting, French Lick Springs Hotel, French Lick, Ind.

## International

**July 23-31**—International Aviation Show, auspices Royal Dutch Aero Club, Ypenburg Airport, The Hague.

**July 29-Aug. 1**—British National Air Races.

**Aug. 26-Sept. 10**—Canadian National Exhibition aircraft show, Toronto.

**Sept. 1-7**—Federation Aeronautique Internationale annual meeting, Wade-Park Manor, Cleveland, O.

**Sept. 12-16**—IATA 5th Annual General meeting, The Hague.

# Between the Lines

By James J. Haggerty, Jr.



## AF's Plane Procurement

The Air Force has completed its aircraft procurement plans for the fiscal year 1950, which begins July 1. The types of planes to be bought have been decided, although the numbers are contingent upon Congressional action. By July 1 Congress will have decided how much money the Air Force can spend during 1950, but as of last week the appropriations bill was still in the Senate, with indications that the Senate would shave the House-passed appropriation somewhat.

The original Presidential budget permitted the Air Force to buy 1,668 planes; the House-passed version called for 2,370. The final figure will probably be somewhere in the neighborhood of 2,000, divided approximately as follows: fighters, 40%; trainers, 33%; transports, 17%; bombers, 7½%, others (liaison, helicopter, etc.) 2½%.

No official announcement as to procurement plans has been made as yet, but here's how it looks:

**Bombers.** The small percentage quoted above does not mean a de-emphasis of the bomber program—only that the high cost of the models to be bought precludes large-scale production. In line with the policy of procuring as few models as possible, only two bomber types will be bought—the Convair B-36 and Boeing's six-jet B-47 Stratojet.

Plans call for the purchase of about 80 B-36's, bringing the total built or on order to about 250, and about 100 B-47's, making the total ordered about 115.

**Fighters.** There are three requirements: penetration, interception and all-weather-night types. There are three contenders for the penetration category—Lockheed's twin-jet XF-90, McDonnell's twin-jet XF-88 and North American's single-jet XF-93, a Nene-powered version of the F-86. It is probable that all three planes will be bought on a moderate scale.

In the interception field, North American, with a hitherto unannounced plane, appears to be on top. The NA interceptor will be another modification of the F-86 series, with a more powerful engine and possibly afterburning or auxiliary rocket power. The AF plans to order about 150 of these interceptors.

Other contenders for later procurement as interceptors are Lockheed's XF-90 and Republic's XF-91. The XF-90 was originally designed as an interceptor with auxiliary rocket power, but the design was switched to that of a penetration fighter and the rockets eliminated. A return to the original design is a possibility. The jet XF-91, which employs inversely-tapered wings and a number of other untested design principles might be ordered into production after completion of its flight test program.

Northrop's jet F-89 all-weather fighter, now in production, will be re-ordered, as will Lockheed's F-94 night fighter, a two-seat radar-equipped version of the basic F-80 airframe.

In addition to these new types, there will probably be repeat orders on North American's F-86 and late models of Republic's F-84.

**Transport.** The cargo picture is fairly clear-cut. The heavy cargo transport will be the Douglas C-124, already in production. There is also a possibility of an order for Convair C-99's (cargo version of the B-36) for use by Strategic Air Command. There will probably also be a re-order of Boeing C-97 Strato-freighters.

In the two-engine category, prospects look good for the Convair-Liner as a C-47 replacement. There is also a requirement for a light assault transport, and this category will be filled either by Northrop's C-125 or the Chase YC-122, a twin-engine plane evolved from a glider design. Northrop would appear to have the edge, since its plane is already in production.

For troop carrier use, the Fairchild C-119, new version of the "Packet," has the field pretty much to itself.

MATS has indicated that it would like some medium transports of the Constellation—DC-6 class, but there will probably be no orders in that category.

**Trainers.** Three requirements: a primary-basic trainer, a multi-engine trainer and a jet trainer. For the PT-BT, Fairchild's T-31, which recently won a competition, will be re-ordered; however, Beech Aircraft Corp.'s Model 45 Mentor, a Bonanza modification, may also come in for a small order. The jet trainer will be Lockheed's TF-80, already in production and the multi-engine trainer will probably be the Convair T-29, a navigation-training version of the Convair-Liner.



**Electronic Test Plane**—This odd-shaped craft, shown taking off on its first flight at Burbank, Calif., is the Navy's PO-1W, a modified Lockheed Constellation. The official Navy announcement described the plane as a "test plane for airborne electronic devices", but actually it is an experi-

ment in the operation of an aerial early warning-intelligence center. The protrusions above and below the fuselage are radomes, while the "spikes" atop the fuselage are antennae. There is also radar equipment in the "droop snoot". Lockheed is building two PO-1W's and the Navy is considering additional orders.

**Liaison.** Requirements will be small, with Cessna getting what business there is with its LC-126A.

**Helicopters.** For the small rescue-liaison helicopter, probably a new version of the Sikorsky H5 series. There is also a requirement for a transport helicopter, the order to be decided by an evaluation of the Kellett H-10 and the Navy-developed Piasecki HRP.

\* \* \* \*

## MATS' Navigation Tests

The Military Air Transport Service is busy trying to prove that the shortest distance between two points is not a straight line—that is, from the standpoint of the time required to traverse the distance between the two points.

MATS is now conducting a series of tests, with its Atlantic Division and Newfoundland Base Command participating, of a navigation system called "minimal flight path." The system is a simple one and is not particularly new in theory, although it is new in operation.

It consists simply of flying the course between any two points where the most favorable winds may be utilized. The winds need not necessarily be tail winds all the way—they may be crossing the flight course at various angles. The object is to fly a flight path so that the net wind effect will be favorable.

Weather reconnaissance by MATS Air Weather Service provides the basis for the minimal flight path. AWS now has the art of predicting weather to a point where a fairly high degree of accuracy can be expected. So, instead of flying the straight, or rhumb line, course between two given points, MATS planes fly sometimes hundreds of miles off course to fly the favorable wind patterns, the idea being that the speed advantage thus gained far outweighs the time consumed in flying off course.

MATS is using the system on a regular run between Newfoundland and the Azores and the results have proved its value. A MATS officer gave us some figures on a typical mission which illustrates the advantage of minimal flight. On June 1 the winds between Newfoundland and the Azores were such that the estimated time to cover the distance on a direct course was nine hours, 26 minutes. However, a Douglas C-54 flying the route that day passed up the direct route and flew the minimal flight path. It flew far north of the direct course at first, crossed the straight-line course about half-way out, flew south of the direct course another quarter of the way and then cut in to the base.

Although the distance flown in this wandering course was almost 200 miles more than the direct route, the actual time consumed was only seven hours, 48 minutes—one hour and 38 minutes less than the estimated time for the direct route. The fuel saved was 345 gallons.

# Production Spotlight

**Procurement Cut:** The 1950 military procurement picture, which had looked so bright only a short time ago when the House passed an \$851,000,000 increase over the President's budget for the Air Force, was taking on a somewhat darker hue last week. An economy-minded Senate was probing through the bill to find out where it could be cut; some Senators even went so far as to say that as much as \$1 billion could be pared off the total.

One thing was clearly indicated: that the House-approved military appropriations bill would not get through the Senate without considerable revision. Best guess was that funds for procurement of new aircraft would not be cut drastically; Senate opinion seemed to be that replacement of obsolescent aircraft was more important than a large standing Air Force this year. The cuts would probably affect operations more than materiel, and the House-approved 57 groups appeared slated for a downward revision, perhaps as low as the President's originally-proposed 48.

**C-97A Test Flights:** Boeing Airplane Co. has completed the first C-97A, military version of the Stratocruiser, at its Renton, Wash., plant and is now conducting test flights preparatory to delivering the plane to the Air Force. This is not the Air Force's first Stratofreighter—Boeing has already delivered 10 earlier versions (six C-97's, three YC-97A's and one "plush" C-97B). Boeing will build 59 of the new "A" models.

**Convair Delivers:** Consolidated Vultee delivered the first models of two planes to the Air Force within the past fortnight. The first was the delta wing (a triangular wing, named for the Greek letter  $\Delta$  it resembles) XF-92A, which features a 60-degree angle of sweepback in contrast to a maximum of 35 degrees on current fighter aircraft. Convair will continue to flight test the plane at Muroc Air Force Base, Calif., under Air Force contract, to explore the operational possibilities of this type of wing.

The second of the two planes was the giant XC-99, a double-deck cargo version of the B-36. The XC-99, which had been undergoing flight testing at Convair's Fort Worth, Tex., plant, was rolled across the field to the Air Force's Carswell AFB adjacent to the plant. It is now being considered as a production plane.

**Employment Leveling:** A survey by the United States Employment Service indicates that employment in the aircraft industry has reached the leveling-off point. Fifty-two aircraft manufacturing establishments, representing 90% of the industry's employment, reported that employment is expected to rise by 1.6% in August, to a total of approximately 232,500, but that it will fall off in October to a point just slightly higher than in April. Plants in California, Washington and Kansas forecast employment declines; Texas plants, however, predicted a slight increase.

**Hughes Helicopter:** Hughes Aircraft Co. is nearing completion of one of the largest helicopters ever built, the XH-17 jet-propelled "Flying Crane," designed to pick up heavy ground forces equipment, such as tanks and heavy artillery, and move them from one location to another. It is expected to be ready for ground test work early this fall. Powered by two General Electric J-35 engines, which channel thrust through the rotor blades to exhaust jets in the rotor tips, the XH17 will span 136 ft., almost as much as a Boeing B-29 Superfortress, from the tip of one of its two rotors to the tip of the other.

**Industry Briefs:** Fairchild Aircraft Division has test flown the first production model of its Air Force C-119 troop-cargo transport, a new version of the C-82 Packet featuring more power and better visibility . . . Convair is building a set of tractor-type landing gear for the B-36, which will weigh 358,000 lbs. when equipped with jet engines. Track gear has already been tried on the Fairchild C-82, which grosses 42,000 lbs., and on the Boeing B-50, which weighs 164,000 lbs. . . . Lockheed is conducting test flights with a jet F-80 equipped with an afterburner. Lockheed's F-94 night fighter, a two-seat version of the F-80, will use afterburning in the production version . . . Wright Aeronautical has delivered the first 800-hp Cyclone 7 engine to North American Aviation, for use in NA's Air Force T-28 trainer.

—J. J. H.



ADMINISTRATIVE

**Roger Davis** has resigned as assistant to the director of economic proceedings of Trans World Airline to join the Fairchild Engine and Airplane Corp.'s NEPA Division at Oak Ridge, Tenn. **R. L. Brown**, formerly senior accountant at TWA's home offices in Kansas City, takes over Davis' former post.

**Elizabeth Foley** has resigned as secretary to **S. A. Stewart**, president of Chicago and Southern Air Lines, and has been replaced by **Mrs. Mary Hall**, former secretary to **R. S. Maurer**, secretary and general counsel.

OPERATIONS—MAINTENANCE

**J. A. Zechiel** has been promoted from shop foreman to assistant superintendent of aircraft overhaul for Northwest Airlines, in charge of aircraft maintenance and overhaul activities at the main overhaul base of NWA at Holman Field, St. Paul. He joined the company as an apprentice mechanic in 1941.

**Richard S. Mitchell**, who joined PAA last year after having served as vice-president of operations for TACA Airways and for Peruvian International Airways, has been appointed superintendent of stations of PAA's Latin American Division, succeeding **Murlin C. Arner**, who is being assigned to another post.



Mitchell

**Capt. Harry D. Taneyhill**, who joined Continental Air Lines as a co-pilot in 1940, has been named assistant chief pilot.

**Clarence N. Corbin**, formerly chief agent for Delta Air Lines at Dallas, has been promoted to station manager at Fort Worth, succeeding **R. E. Camors**. The latter was transferred to Dallas to replace **W. F. Gillespie**, resigned.

**John H. Clements**, formerly station manager for Mid-Continent Airlines at Bismarck, N. D., has been transferred to Fort Smith, Ark., in the same capacity.

**Carl D. Hackley**, formerly station manager at Paris, Tex., succeeds Clements at Bismarck.

**Herbert Drew** has been appointed station manager for National Airlines at Baltimore, succeeding **Max Hutchinson**, who has become assistant station manager at Washington. Drew was an operations agent at Jacksonville.

**Fred Dawson**, chief of land line communications for PAA at La Guardia Field, and **Capt. Arthur E. (Mike) La Porte**, deputy chief dispatcher in the Atlantic Division, are among those awarded 20-year pins by Pan American last month.



**Joins C-W**—**Maj. Gen. Edward M. (Pop) Powers**, USAF (Ret.), has been appointed v. p.-director of engineering for Curtiss-Wright Corp. He will coordinate the engineering activities of Wright Aeronautical Corp. and C-W's Airplane and Propeller Divisions. Powers was Assistant Chief of Staff for Materiel in Air Force headquarters when he retired in May after more than 30 years of service.

**Helen Marzolf**, former stewardess instructor, has taken over the duties of supervisor of stewardesses for Northwest Airlines' eastern region, replacing

**Jessie McLeod**, who returned to flight duty at her own request. **Rose Myers** becomes supervisor of stewardesses for the western region, succeeding **Denise Bichsel**, resigned.

**H. J. Langford** has been named station manager for National Airlines at Valdosta, Ga.

**W. W. Kessler**, operations manager for American Airlines in San Francisco, observed his 20th anniversary with the company last month and was honored with a dinner given by AA employees in the Bay Area.

**J. D. Tilford** has been named station manager for NAL at Marianna, Ga.

TRAFFIC & SALES

**Ernest L. Foss** has been appointed to the new dual post of sales and advertising manager of PAA's Latin American Division as part of a departmental reorganization to consolidate promotional activities. **Frank H. Sheldon** was named assistant division sales manager in the reorganization, with three superintendents under him: **Fred Stoddard**, passenger sales; **John C. Cooper**, cargo sales, and **Shelby W. Merrill**, agency and interline sales. **Ray C. Buckner** also is

under him as cargo sales coordinator. **James C. Oliver** becomes assistant advertising manager, and **William Ryder** becomes advertising production manager.

**Clyde Doran**, district traffic and sales manager for United at Washington, has been elected chairman of the Combined Airlines Ticket Office Committee there, succeeding **J. P. Brock** of TWA.

**Mrs. Flora Christensen** has been named women's traffic representative for United Air Lines in Honolulu. Her career with United began in 1936 in the flight operations department at Los Angeles, Cal.

**Frank McPherson** has been appointed as cargo representative for Braniff Airways, assigned to supervision over international cargo shipments passing through Houston.

Others in the News

**Stephen du Pont**, formerly chief engineer of the Indian Motorcycle Co., has been elected to the board of directors of Doman Helicopters, Inc., of Danbury, Conn.

**Dr. Hugh L. Dryden**, director of the National Advisory Committee for Aeronautics, was awarded the honorary degree of Doctor of Science by Polytechnic Institute of Brooklyn on June 15 in recognition of his distinguished achievements in aeronautical engineering.

**Oscar Bergstrom**, formerly vice-president and general traffic manager of Florida Airways, has gone into the insurance and investment business in Winter Park, Fla., under the name of Security Associates.

**James A. Crabtree**, chief weight engineer for Hughes Aircraft Co., has been elected national president of the Society of Aeronautical Weight Engineers for 1949. **W. H. Statler** and **L. R. Hackney**, both of Lockheed Aircraft, were elected vice-president and executive secretary, respectively.

Robinson Says New Policies Led to Resignation from RAL

Dissatisfaction with the management and operational policies of the controlling group of the Robinson Airlines' board led to his resignation as chairman of the board, director and member of the executive committee of the feederline, **C. S. Robinson**, founder of the company, said last month.

Robinson and his manufacturing company, Robinson Aviation Inc., hold about 54% of the airline's capital stock. However, in 1948, following CAB certification, additional funds were raised through a debenture issue, the holders of which acquired control of the company through a voting trust.

Ideas, policies and standards which were responsible for founding and growth of the airline have not been carried through by the present group, Robinson said.



## Milestones

### British Civil Aviation

The 30th anniversary last month of the first trans-Atlantic direct crossing commemorated the inauguration of British civil aviation. On June 14-15, 1919, two British flyers, Capt. John Alcock and Lieut. A. Whitten Brown, completed the trans-Atlantic crossing from St. John's, Newfoundland, to Clifden, Galway, in a Vickers-Vimy twin-engine bomber. Flight took 15 hrs., 57 minutes. Two months later, in August, British civil aviation came into being with inauguration of the first British service between London and Paris by Aircraft Transport and Travel Ltd.

### 25 Years for ABA

ABA Swedish Air Lines last month marked the 25th anniversary of its first service, which was operated between Stockholm and Helsinki with a single-engine Junker F-13 seaplane. Carl Florman, who had been president of ABA since its formation, retired on June 2, the anniversary date, and was succeeded by Per A. Norlin, formerly president of Scandinavian Airlines System. ABA states that no other airline has had one president in office as long as Florman.

### East-West Air Link

Trans World Airline, on July 8, will celebrate the 20th anniversary of the first one-company link between the East and West Coasts by air, performed by its predecessor company, Transcontinental Air Transport. It was a combination air-rail trip completed in 48 hours, less than half the time required for an all surface trip. Fare was \$351.94.

Sharing important roles in the historic flight were TWA's present top operations and traffic executives. John A. Collings, v.p.-operations, flew the final Columbus-Newark leg of the flight, while E. O. (Oz) Cocke, v.p.-traffic, is credited with having sold the first transcontinental air ticket.

TWA has been successful in its search for a Ford tri-motor transport of the type used to start scheduled transcontinental service 20 years ago, and plans to use the craft in ceremonies at Grand Central Airport, Los Angeles on July 8.

### 20 Years for Delta

Delta Air Lines celebrated the 20th anniversary of its first passenger service across the south on June 1. The first flights were from Dallas, Tex., to Jackson, Miss., with stops at Shreveport and Monroe, using single-engine Travelaires which cruised at 90 mph and carried 6 persons. No mail or express was carried.

The first three employees of Delta Air Service in 1929 are still with company. They are C. E. Woolman, president and general manager; Catherine Fitzgerald, assistant treasurer and secretary to the president; and L. B. Judd, comptroller.

### Cleveland Aviation Club

The Cleveland Aviation Club marked its 30th anniversary on June 15. Membership totals about 300, all past or present flyers.

# Airline Commentary

By ERIC BRAMLEY

WHY IS A "star" route called a "star" route is a question that seems to have aroused peoples' curiosity. You've heard about these mail routes and how the Post Office Dept. wants to have a number of them operated by plane. They're routes that are operated by whatever kind of transport is available in places where there isn't train service, or where train schedules are inadequate. Anyway, the name "star" route goes way back to the days when Benjamin Franklin had something to do with the Post Office. In those days, there were operations known as "security, celerity and certainty" routes. Whenever the mail came in by horseback, buggy, or other means, the postmaster had to fill out a form to the effect that "security, celerity and certainty route mail arrived at 1 p.m." Well, pretty soon the postmasters got tired of all that writing, so they started to use three stars in place of the first three words. Naturally, the next step was to call them "star" routes. So that's how it happened.

*We've been urging that some U. S. airline start giving passengers bibs with in-flight meals, because they'd keep the customers cleaner and would be easier to handle than napkins. Well, a U. S. airline isn't going to have the distinction of being first, because Scandinavian Airlines System is adopting bibs in the near future. Some time ago, Wayne Parrish, our editor, was in Sweden during "Crawfish Day." It seems that everyone eats crawfish on that occasion, and everyone uses a bib. As Mr. Parrish adjusted his bib, he remarked to Per Norlin, then SAS president and now head of ABA Swedish Air Lines, that this was exactly what the airlines needed. Norlin made a note. That suggestion and that note led to SAS's adoption of bibs. U. S. lines please copy.*

Bob Aldrich, executive director of the Minneapolis-St. Paul Metropolitan Airports Commission, takes us to task for ignoring the fact that at Wold-Chamberlain Field, Minneapolis, he has practically a production-line method for buying and mail trip insurance policies. He sent the picture we're printing, with the remark that if Gopher Aviation, Inc., "were not located where



it is, we would have put the insurance machine on top of the stamp machines and mail box." Note machines at left and mail box and stamps to the right. When we wrote of the need for adequate mailing facilities in connection with insurance, we weren't aware of this set-up. Anyway, he soothes our feelings by saying that "to be perfectly frank, it was a remark of yours dropped many months ago on this subject that made us very conscious of the necessity, from a passenger service point of view, of having these facilities close together." Okay, Bob.

*Here's a typographical error for you. In Bombay, India, the Chronicle was reporting on an early Pan American Airways training flight across the Atlantic with a Stratocruiser. The paper said: "When The Flying Cloud arrived at Shannon, one of her engineers was cut and 'feathered' as an oil leak developed while the plane was over the Atlantic." Commented Indian Skyways magazine, reporting the error: "Tough guys, these Americans!"*

# Private Line Communications Will Ease Traffic Control

By WILLIAM D. PERREAULT

Instrument flight problems remain the major obstacle to all-weather operation and regularity of schedules. Landing interval during instrument weather flying averaged about 5 minutes this past winter as compared with 11-15 minutes in 1946. This is the progress reported by Roys Jones, of CAA, speaking before the Institute of Navigation at Annapolis, Md., on June 10.

The Chicago terminal area has a capacity of 46 airplanes in the stacks used for airplane storage awaiting clearance for landing. The Washington stacks will hold 51 planes although this capacity is seldom utilized. It would take almost four hours to empty the 51-plane stack and an airplane ladder down from the 10th level to the approach position would find some 52 radio-telephone contacts necessary. If GCA were used, and this practice is on the increase, the number of contacts would increase several fold, reported Jones.

Improvements have been made in assuring schedule completions even in instrument weather. For major improvements, such as cutting the five minute national landing interval to about 3 minutes, a new approach to air traffic control problems will probably be necessary. When decided upon, this approach will be initiated in the Eastern part of the U. S. where 60% of traffic congestion occurs. Next would come the installations between the Mississippi River and the Rocky Mountains where 24% of the traffic is concentrated, then the west coast area.

**New Approach.** The private line communications system will serve to provide the new approach in air traffic control handling. It will minimize, but not replace, use of radio telephone in the traffic control area by substituting a system of symbolic instrumentation in the cockpit. Such a program was laid out by Special Committee 31 of the Radio Technical Committee for Aeronautics. This committee recommended a transition phase system to be completed within five years and an ultimate or target system for use by 1963. Final preparation of an operational specification for a system of private line communications, suitable for ground-air communications in the transition phase period, is now being edited. The report, prepared by SC-41, was discussed by Vernon Weihe, during the ION meeting. Weihe is chairman of SC-41 and an ATA staff member.

His report represents a major step in achieving a transition system. It un-

covers for discussion the question of how such a system can be attained and economically justified in the short period remaining. On this point rests the future of the private line in the transition period.

Under consideration have been all the wartime and postwar systems of communications such as Beechnut, Voflag, television, facsimile, teleprinter, etc. Weihe reviewed how these systems had been dropped from consideration, one by one. The system would have to be developed to a stage where pre-production models would be available from the laboratories in 18-24 months. This raised the discussion of advantages which would accrue by multiplexing the transition phase system on existing VHF omnirange equipment now being installed.

If this is accomplished television is out, since it is a wide band system, while the VHF is a narrow band, low information rate system. Facsimile, teleprinter and similar systems were

ruled out, according to Weihe, because of operational problems such as distraction caused by moving paper in the cockpit, possibility of fire accompanying electric etching of graph paper, etc. For these reasons, SC-41's report will recommend that a VHF multiplex indicator signalling system be used during the transition period.

**Tie-in With RTCA.** The question was raised as to how such a system meets the announced aims of the RTCA program, particularly provisions regarding independence of systems. To these, Weihe replied that SC-41 was established to weigh the possibilities and make recommendations. From his standpoint, the choice of a multiplexed system provided the only possibility of an economically justifiable transition phase system of private line communications. Private line communications may be distinguished from existing systems in that the individual pilot only receives data pertinent to himself. This would be a major improvement.

While important, justification of the transition phase system should not rest on improved schedules, increased acceptance of air travel and other intangibles. Economic justification is necessary and Weihe provided a means of accomplishing this.

## CAA Navigation & Traffic Control Program

Vernon Weihe, in discussing the findings of RTCA SC-41, indicated that the proposal for the transition phase private line communications system will recommend multiplexing this "new system on the existing VHF" system, thereby taking advantage of the extensive use of already highly developed transmitting and receiving equipments both in the air and on the ground."

He also commented that improvements in traffic control and schedule regularity will depend on developments in general landing aids aside from the communications equipment. The charts below represent CAA's estimate of the progress that can be expected in time for use in implementing this program.

Facility	Total pro- grammed as of fiscal	
	6-1-49	1952
Omnirange .....	294	409
Instrument Landing System .....	92	320
High Intensity Approach Lights .....	1	320
Airport Surveillance Radar .....	3	150
Precision Approach Radar .....	3	82
Distance Measuring Equipment .....	3	731
ATC Towers .....	147	203
ATC Centers .....	26	30
Airways Communications Stations .....	396	418

Airports across the country will be equipped with varying degrees of this equipment depending upon known traffic density. East coast installations are likely to be the first programmed. For simple classification purposes it can be assumed that the basic instrument air terminal will be one located adjacent to an omni-range station and suitable for instrument landings. Class D-IAT will also have DME, enroute navigational guidance for aircraft landing at or departing from the terminal plus ILS and associated high intensity approach lights. Class C IAT will have the equipment listed for class D terminals plus an airport control tower. Class B IAT would have all the above and airport surveillance radar while class A instrument air terminals would also have precision approach radar.

Classification	Fiscal Years		
	1950	1951	1952
Basic Instrument Air Terminal .....	227	110	120
Class D Instrument Air Terminal .....	0	0	117
Class C Instrument Air Terminal .....	0	79	53
Class B Instrument Air Terminal .....	0	31	68
Class A Instrument Air Terminal .....	26	64	32
<b>Total .....</b>	<b>253</b>	<b>284</b>	<b>410</b>

If the landing intervals during instrument weather operation can be cut from  $3\frac{1}{2}$  minutes to two minutes, this would save  $67\frac{1}{2}$  minutes time in a ten airplane stack. With operating cost of the DC-6 at about \$157 per hour, the time saving for this type airplane would represent about \$200.

From a practical approach, the fact that other aids now being implemented must be given credit for some of this direct reduction in operating costs must be considered. Even with only 25% of the saving allocated to regularity resulting from precision traffic control made possible by this system, the expenditure can be economically justified.

Estimated weight of the flight equipment would be about 50 lbs. Ton mile operating cost of the DC-3 is about 10c and for the DC-6 about 5c. At this level, it would cost between 35 and 70 cents to carry the flight equipment on a 250 mile flight. The SC-41 report, as summarized by Weihe to the ION, provides the ground work on which the ACC and ANDB can base future activity in this field.

It also provides operational requirements in some detail, including the type of information that will be required by the pilot, and recommendations on the four best ways to dispatch the data. No attempt is made to outline the actual shape the symbolic indicator will take, but it is hoped to keep physical volume to about 36 cu. in.

**Transponders.** What part will transponders play in the transition system? According to Norman Caplan, ANDB engineer and former RCA engineer, transponders have the capacity to accomplish many of the needs of a transition system, including keeping a record of the past position of airplanes, determining the present position and possibly establishing the future position. This will probably be accomplished by secondary radar in which the ground generated pulse interrogates an aircraft and triggers equipment which initiates a response from the airplane.

It is of utmost importance at this time that we stop and analyze the needs of the operation, Caplan said. What resolution is required? What accuracy and at what rate must the information be supplied? With answers to these questions, the electronics industry can provide the equipment to suit the need. Unless we do analyze the needs, we may find ourselves needlessly hampering development by overdesigning to meet specifications which are far more stringent than operational needs dictate.

Speaking of resolution of the system, Caplan pointed out that a system with resolution which provided the exact airplane shape on the controllers scope might lead to serious problems. When the outlines on the scope appeared to meet, this would actually be the case and no correction would be possible.



**Quiet Cell—** These are two views of the quiet type engine test cell used by Piedmont Airlines. The top view shows the outside of the cell which was originally purchased from war surplus and then modified by D. R. Willard of Piedmont to meet the airline's specific needs. The stand features a central control room with dual panels for the two engine test mounts. Basic construction is of 2x6 studding with celotex, German siding, and building felt used to insulate the cell proper so as to minimize the noise level.

Of particular interest are the PyDee units supplied by Janke & Co., Inc. of Hackensack, N. J., to lower the noise level further. These are tubular units with capped ends that are suspended in the outlet of the test house on a grid of wire construction.



Perhaps it will be wise to surround the airplane pip with an area of confusion so that when the pips meet there will still be time to initiate corrective action and avoid a collision.

Caplan followed through with analytical methods that can be used to determine these needs. Using resolution as an example, he outlined extremes which exist and how the detail accomplishment of the extremes might help or hamper the early accomplishment of the required system. It merely proved the need for compromise and study. In the field of compromise, a post-lecture remark seems particularly pertinent to the theme of this whole meeting. It was, "No single equipment will meet all the needs. Each must be fitted into the pattern where it will serve the most useful purpose in accomplishing system needs."

Dr. Maxwell Goldstein, another ANDB engineer, outlined some interesting approaches to the solution of air traffic control problems. He grouped the approaches as theoretical and experimental and broke these down accordingly. While emphasizing that there must be a balance between these two types, he referred to the experi-

mental method of using a full flight test program for analyses as the "brute force" method. Use of models, simulators and links provide a medium combining the theoretical and experimental.

He showed how simple charting of past operations records brought out major trends in the effect of changing the number of aircraft operated, the landing separation, etc. Goldstein's points were again touched on by Dr. Lewis Taber of Franklin Institute in reviewing their findings during experiments with the Link Trainer.

## Mid-Air Refueling Company To Offer Service This Year

Anticipating increased business in this country, and particularly in-flight refueling over the North Atlantic this year, Flight Refueling, Inc., American affiliate of the British company, Flight Refuelling, Ltd., has set up headquarters at Danbury, Conn. Flight Refueling expects to offer a commercial mid-air refueling service across the North Atlantic this year, according to company officials. They say some interest has



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# Lockheed

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already been expressed in using the system by both scheduled and non-scheduled carriers.

The British parent company conducted extensive experimental mid-air refueling flights over both the North and South Atlantic for the British government two years ago and more recently has supplied the equipment used on some B-29's and B-50's by the U.S.A.F.

Primary work at Danbury will be the assembly and test of equipment. Later, all equipment will be manufactured in this country. Meanwhile Flight Refueling will market the equipment for use in ground pressure refueling systems, which is another application for certain of the components.

## Seven Turbo-Prop Engines Being Developed by British

Seven turbo-prop engines are currently being developed in Great Britain, but experts in that country feel that it will take two years before this type engine offers to challenge reciprocating type engines in either civil or military use. Advantages claimed for the turbo-prop include reduced frontal area, less vibration and consequent lower airframe maintenance costs, ability to use inexpensive and less volatile fuel types, ability to use lighter propellers, and increased crew and passenger comfort resulting from these characteristics.

All but the Proteus have been tested in the air. The Python has been used along with conventional engines in a Lancaster bomber, the Mamba was flown in the nose of a Lancaster and later in the Athena and Balliol, and ultimately will power the Armstrong Whitworth Apollo and the Marathon.

The Theseus has been in a Lincoln bomber and will be used in an experimental version of the Handley-Page Hermes. Tests of the Napier Naiad were conducted in the nose of a Lancaster bomber while the Rolls-Royce Clyde has been tested in the nose of the W.35, a Westland warplane. The Dart powers the Vickers-Armstrong Viscount.

Name	Max. Rat- Power ing		Weight Less	
	Thrust Lb.	(S.L. R.P.M.	Air- crew	screw
Armstrong Siddeley PYTHON	1,150	3,670	8,000	3,150*
Armstrong Siddeley MAMBA	307	1,010	15,000	760
Bristol THESEUS	590	2,200	8,200	1,860**
Bristol PROTEUS	800	3,200	10,000	2,900
Napier NAIAD	241	1,500	18,250	1,095
Rolls-Royce CLYDE	1,225	3,020	6,000	2,800
Rolls-Royce DART	295	1,400	14,500	850

\* Weight includes intakes.

\*\* Weight includes intakes, heat exchanger, and mounting.



**'Ham' Lee Retires**—Capt. E. Hamilton (Ham) Lee, of United Air Lines, retired on June 9 after flying the mail for 30 consecutive years. He flew the first experimental air mail route between New York and Washington in 1918, and joined Boeing Air Transport, UAL predecessor company, in 1927. He totaled 4,400,000 miles of flying in 36 years. Lee will manage apartment properties in Glendale and Los Angeles.

## AMC Gets Overhaul Contracts for \$3,300,000

New overhaul contracts totaling \$3,300,000 were announced by Aviation Maintenance Corp., along with details of a recently completed re-organization program. The contracts included three with the Air Materiel Command, two involving 30 C-47 aircraft for use by the Greek government. AMC will buy these 30 aircraft on the open market and overhaul them to meet the Greek government's requirements.

This contract is supplemented by another of equal dollar value for supplying sufficient replacement parts to maintain the 30 aircraft for three years.

The third contract contributing to the \$3,300,000 total in new orders involves the complete overhaul of 78 AT-11 aircraft while the fourth is a contract with American Airlines for the conversion of 18 Douglas DC-4 aircraft. 14 of these ships will be made over into sky freighters and four will be converted to sky coach-freighter combinations. This latter contract is a \$300,000 program. The announcement by AMC represents the first indication that American Airlines is interested in the sky-coach market.

Low bids on these contracts, which brought them into AMC's shops, were made possible by careful reorganization of the 77 acre base which employs some 903 workers. Through the rental of

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## OPERATIONS-MAINTENANCE

surplus areas and the more efficient use of needed areas, the overhead has been reduced 30% and the ratio of direct to indirect employees has leveled off at 80 direct to 20 indirect. 721 of the employees are direct production workers.

Administrative changes at AMC include the election of two additional officers, George E. Lam as vice-president in charge of production and John G. McKean as a director and treasurer. Dan Hill, formerly AMC treasurer, who resigned to become treasurer of an associate company, will serve as assistant treasurer of AMC for the present time.

Financial standing of AMC has been improved considerably by a \$350,000 RFC loan, repayable in two years, and an agreement with Brown and Root, Houston construction contracting firm, to underwrite future contracts as required.

## ICAO Seeks Standard Procedure for World Air-Ground Radio

Substantial progress toward producing a single set of dimensional standards for use along the world airways has been announced by the International Civil Aviation Organization, which states that 34 of its 52 member nations have agreed to take the first step in a plan designed to relieve confusion in air-ground radio communications caused by differing measurement systems now employed.

The United States, however, has informed ICAO that it is unable as yet to arrange for uniform use, within its airline operations, of any one of the five ICAO tables of units, the organization said. It added that 16 nations have already accepted the final table.

ICAO's standardization plan consists of an agreement on five tables of units, incorporating elements of both the metric and the foot-pound-second systems. One table uses the English system, the second the English system plus measurement of air pressure in millibars rather than inches of mercury. The third replaces statute miles with nautical miles, the fourth uses the metric system entirely, and the fifth—and eventually final table—is a combination of the third and fourth, using metric system for all purposes except that nautical miles would be used for long distances and speeds. All five tables use centigrade scale for temperature measurements. The plan provides for progressive reduction of the number of tables until all nations are using table five for air-ground communication.

Nations that have accepted the final table are: Argentina, Belgium, Colombia, Czechoslovakia, Denmark, Egypt, Finland, France, Greece, Luxembourg, Netherlands, Norway, Peru, Portugal, Sweden and Switzerland. The U. S., together with Canada, Ethiopia, and Iraq have not accepted any tables.

AMERICAN AVIATION



## Extra Section

By William D. Perreault



CAA HAS APPROVED the use of portable water-solution type fire extinguishers meeting with requirements set forth in sections 5 and 6 of SAE specification AS-245. Walter Kidde has announced the design of a water solution type extinguisher that will meet these requirements and which has CAA approval. This unit should prove of particular value in the cabin where seat covers and other materials of this nature are apt to cause the greatest amount of trouble and gaseous or powder type extinguishers leave smoldering embers. Antifreeze has to be used to avoid the danger of freezing in temperatures as low as  $-40^{\circ}\text{F}$ .

Western Air Lines has the cabin pressurization system on all 10 Convair Liners working in fine order, according to reports from the west coast. The standard replumbing fix, including stainless steel tubing, filters and single pass intercoolers, has been installed with manual controls for opening relief valves. In one plane the Vickers components have passed the 600-hour mark.

Fuel of a new performance number is apt to result from studies now underway in operation of the Boeing 377. There is considerable interest in using PN 108/135 in the P&W 4360 engines instead of 115/145—the fuel on which the 3500 hp take-off rating is based. The Air Force reportedly is using 100/130 fuel with a 250 hp loss at take-off, while Pan American has used 115/145 but with regrets regarding the high lead content. A drop from 115/145 to 108/135 would save about  $1\frac{1}{2}$  to 2c per gallon on basic cost and probably cut maintenance costs appreciably.

Studies made by United Air Lines indicate that costs "attributable to the effects of tetraethyl lead" in 1948 were almost \$2,000,000 or approximately 25% of the estimated fuel costs. In UAL's opinion, a reduction of T.E.L. content from 3.9 cc's per gal. to 3 cc's in 100/130 would result in at least a 25% reduction in costs attributable to lead. On this basis, it would have been possible to pay .8c per gal. more for equivalent fuel with lower lead content. To obtain economic advantage, the maximum advisable differential might be set at about .5c per gallon.

It looks as if we can begin to record the growth of airplanes in terms of the wheel configuration. Reviewing the single wheel gear arrangement of the DC-3's, the dual wheel gears of the DC-4, DC-6 and Constellations, the four wheel main gears of the Lockheed Constitution, and the eight wheel gear arrangement for the Brabazon, it would appear to a clear cut indication. In 10 or 15 years the old timers will be saying, "I remember back in the days of the single wheel gear, etc."

One of the most surprising feuds in recent years is the DC-6 versus Constellation conflict between Delta Air Lines and Eastern. When Delta acquired its first DC-6, it released information, comparing the DC-6 with the Constellation and outlining the reasons behind the choice of equipment. Eastern circulated a memo to employees directly contradicting many points in the DAL newsletter. In one instance, the EAL rebuttal claims a one mile per hour advantage for the Constellation over the DC-6 and at another point a 2 mph advantage in block to block speeds on a 1,000-mile flight. Recalling the large variance in test results when attempting to establish cruising flight-speed data on new powerplant-aircraft configurations, it appears that these gentlemen are slicing it pretty thin.

Indications are that the loud speakers used on the DC-6's are tuned to overcome engine noises on the ground but not loud enough to overcome general flight noises. Although there would appear to be a close line between a proper hearing level and the possibility of irritating sleeping passengers, it does seem that messages loud enough to command your attention and too low to understand are of doubtful value. It might be a good idea to set up the volume controls during routine test flights to insure getting messages across.

JULY 1, 1949

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## OPERATIONS-MAINTENANCE



**At Pilot Meeting—** Shown at the chief pilots' meeting, Carlton Hotel, Washington, D. C., June 14-16 are: top picture, left to right, R. V. Carleton, dir.-flight operations, Braniff; R. P. Harris, chief pilot, Mid-Continent Airlines; M. W. Arnold, v.p. ops. & eng., ATA; and H. J. Reid, mgr. flight operations, Capital Airlines. Bottom, left to right, B. S. Dixwell, chief pilot, Northeast Airlines; Ferman Stone, chief pilot, central section, Eastern Air Lines; L. J. Royall, Jr., chief pilot, National Airlines; and W. E. Larned, supt. of flying, United Air Lines.

## Airline Chief Pilots Discuss Electronic Navigational Aids

Electronic aids to navigation and landing were the chief topics of discussion at the three day airline chief pilots meeting in Washington on June 14-16. With pilots representing all the ATA members in attendance, the meeting reviewed progress of the installation and operation of omni-directional range stations, distance measuring equipment and the offset course computer. Particular attention was paid to utilization of omni-range equipment between New York and Chicago.

Technicalities of the utilization of the ILS, including runway length requirements for ILS-equipped alternate airports, use of the back course and minimums for instrument landings at airports equipped with ILS but without approach lights were discussed. CAA has insisted that approach lights are a part of the ILS along with the localizer, glide slope, and inner and outer marker, without which minimums can not be reduced.

Provisions of CAA's operations manual preface page requirements were also discussed with particular attention to operations in reduced visibility and icing conditions, ground radio communications and navigational facilities, and changes in CAR.

## Among the Suppliers

**THE TIMKEN** Roller Bearing Co., celebrates its 50th anniversary this year. Founded in 1899, the company today—some five billion bearings later—has plants in Canton, Columbus, Zanesville, Mount Vernon, Wooster, Zoarville and Bucyrus, Ohio; Colorado Springs, Colorado; and St. Thomas and Ontario, Canada. Not only does Timken manufacture a large share of all roller bearings, but its mills supply high grade steels to competitive companies which form the bearings of these manufacturers.

**William E. Osborne** has been named chief of the Electronic and Guidance Division of the Marquardt Aircraft Co., subsidiary of the General Tire and Rubber Co. of Calif. . . **Pratt & Whitney Aircraft** has advised that its plant will be closed from July 29 thru Aug. 7—while inventory is being completed. Shipments of material should not be made that will reach the plant during that period . . . **Hamilton Standard** notes that Lockheed has selected the 43E60 reversing hydromatic propeller for the 20 Constellations ordered by TWA.

**Burnham Adams** manager of the California division of **Lear, Inc.**, has been elected vice-president by the Lear board of Directors. Prior to joining Lear, Adams was with Wright Aeronautical Corp. for 22 years.



Adams

**Southwest Airmotive Corp.** is distributing a pocket size listing of information for the convenience of transient flyers. Known as the "Visitor's Compass," the new booklet is a continuation of the popular booklet originated three years ago. The "Visitor's Compass" lists telephone numbers of taxicabs, hotels, railroads, airlines, CAA and managerial offices on Love Field, a detailed diagram of the municipal airport, runway lengths and numbers, etc. Copies are available on request to the Public Relations Director, Southwest Airmotive Company, Love Field, Dallas, Tex.

**Air Associates, Inc.** has been appointed distributor of Tinnerman Products Speed Nuts and Speed Clips. AA will maintain stocks of the units in Los Angeles, Dallas, Chicago and Teterboro. . . **Westinghouse Electric Corp.** and the **Adamson United Co.**, are working with the Air Force on the development of a vest pocket "landing strip" which will be used to duplicate landing conditions for testing airplane tires. A 150 h.p. Westinghouse motor will be used to drive a flywheel at speeds simulating landing speeds. Various landing speeds and rolling friction can be introduced by varying motor speed prior to bringing the tire in contact with the flywheel.

**Hamilton Standard Propellers Division** of **United Aircraft Corp.** has dropped the word "propellers" from its official name to reflect its increasing activities in producing other aircraft parts.

## Winners Named in ATA Annual Research Contest

The Air Transport Association has named the three winners of its annual contest for airline employees performing the best original research having a practical application towards improving weather analysis, forecasting and the dispatching of aircraft.

Winner of the first prize of \$250 was Lyle E. Brosche, of Pan American's At-



Brosche

Gifford

lantic Division for his paper "A Proposed Way to Fly the Atlantic."

Second prize of \$150 went to Frank Gifford, of Northwest Airlines for his paper entitled "Forecasting the Height of Stratus Ceilings in the Layer of Surface Turbulence."

A paper covering "A Method of Forecasting the Degree of Turbulence in Fronts and Line Squalls" won third prize of \$100 for R. M. Whiting, Eastern Air Lines. Honorable mention was given papers authored by Robert W. Mudge and B. H. Visscher, EAL.

E. B. Buxton, of Chicago & Southern Air Lines was chairman of the award committee. He reported that the collection of papers entered in this year's contest is the best since the annual competition started eight years ago.

### —TECHNICAL LITERATURE—

**Expansion Joints:** The Chicago Metal Hose Corp., Maywood, Ill., has released a 28 page bulletin, written in non-technical language and widely illustrated with charts, tables and photos. It is designed to simplify the selection and application of expansion joints in piping systems.

**Auxiliary Power:** Motor Generator Corp., Hobart Square, Troy, O., has published a four-page, two-color folder covering its line of aircraft ground auxiliary power supply units for hangar, ramp and apron service. Equipment involved includes units used to start aircraft engines, operate radio, radar, autopilot, direction indicator, and compass; charge aircraft batteries after installation; air conditioning, etc. Both electric motor and gasoline engine driven units are described.

**Electrical Connections:** Russel & Stoll Company, Inc., 125 Barclay St., New York 7, N. Y., has published Bulletin EL-49-24 covering automatic locking Midget EVER-LOK plugs, receptacles and cord connectors for commercial and industrial applications. This 12 page catalog is complete with illustrations, dimensional drawings and convenient ordering information.

**Fluids and Lubricants:** Carbide and Carbon Chemicals Corp., 30 East 42nd St., New

York 17, N. Y., has published a 30 page booklet titled "Ucon Brand Fluids and Lubricants." It describes the various types of "Ucon" polyalkylene glycol lubricants and the use of these unusual products for the lubrication of many types of machinery, gears, internal combustion engines, rubber products and instruments. Uses of "Ucon" fluids as hydraulic fluids; leather conditioning agents; plasticizers, softeners, and solvents; de-emulsifiers; defoamers; and heat transfer fluids are described.

**O-Rings:** The Parker Appliance Co., 17325 Euclid Ave., Cleveland 12, O., has published bulletin 834, a release covering O-ring types specially compounded for aircraft use in sealing fuel systems. Application of four fuel-resistant compound types—three of them meeting specific requirements of the armed services—is discussed with a tabulation of physical properties and percentage volume change under a variety of conditions. Included are dimensions of 88 O-ring sizes, special diaphragms, gaskets, etc.

**Plastic Strengtheners:** Owens-Corning Fiberglas Corp., Toledo 1, Ohio has published a 12-page illustrated manual describing Fiberglas products, which includes yarns, cloths woven of yarns, mats and chopped strands, available for the reinforcement of plastics. The manual describes the resins with which each is commonly used and the molding processes commonly employed.

**Testing Aids:** The Baldwin Locomotive Works, Philadelphia 42, Pa., is circulating a new bulletin, 261-A, describing the supplementary devices which can be used to adapt testing machines to the widest scope of testing conditions. Included are several types of specimen grips, auxiliary equipment to widen the range of testing, such as transverse test fixtures, cold bending fixtures, and load-weighting air cells; ac-

cessories that extend some aspect of testing machine performance, such as controlled-temperature cabinet, furnace and load controlling accessories; and various testing conveniences. Fully illustrated.

**Goodrich Hose:** The B. F. Goodrich Co., Akron, O., has released a new catalog section covering Goodrich water hose in various industrial applications. The section pictures and describes construction of each type water hose the company manufactures, lists recommended uses and gives detailed specifications and coupling information.

**Hydraulic Valves:** Gerotor May Corp., Section 201, Baltimore 3, Md., has published a catalog covering hydraulic valve equipment. The 52-page booklet is printed on 8½x11 in. paper and in two colors. It describes 90 different models of Gerotor four-way hydraulic valves covering the entire line. Included are general descriptions, working drawings, specifications for size, cut-away views and operational diagrams of piston designs.

Valves for hand, foot, cam, solenoid, oil pressure, and air pressure operation are shown, in four types of action: standard, spring return, spring centered, and ball detent. Also described are 25 models of oil pilot valves for remote control of four-way valves and flow control, shut-off and deceleration, relief, sequence, unloading, and counter-balance.

**Public Address Systems:** Altec Service Corp., 161 Sixth Ave., New York 13, N. Y., has released an eight page brochure titled "Altec Speech and Music Reinforcement (P. A.) Systems." It deals with detailed engineering and analytical concepts and complete technical components for public address systems. This company has supplied equipment for dress systems engineered for all purposes, airline public address systems in airplanes.

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## NEW PRODUCTS

### Water Extinguisher

Walter Kidde & Co., Belleville, N. J., has obtained CAA approval of a new water extinguisher intended for use on Class A fires in aircraft interiors. The company claims that this is the first extinguisher of its kind providing a rechargeable water-type unit to protect



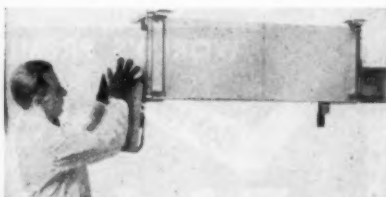
against the hazard of fires in carbonaceous materials inside aircraft cabins.

The extinguisher weighs less than 7 lbs. and carries 1½ qt. of anti-freeze water solution which is pressurized prior to use by means of a small carbon dioxide gas charge carried in a threaded handle. As the handle is turned in, the seal on the cartridge is punctured and the water chamber becomes pressurized. Thumb pressure on the control valve releases the water stream which can be directed 20 ft. or more during fire fighting operations.

Ordinary water can be used in recharging the extinguisher with fluid and the carbon dioxide cylinder is easily replaced. A light-weight supporting bracket makes installation simple.

### Refrigeration Unit

Foster-Built Bunkers, Inc., 757 W. Polk St., Chicago 7, Ill., a leading manufacturer of dry-ice equipment, is marketing a low cost unit for air freight refrigeration. It consists of a reinforced aluminum bunker which holds



dry ice over a 2-inch enclosed air duct and a sirocco-type fan which forces surrounding air throughout the compartment. The bunker is installed by the use of four studs plus a simple wiring operation. The circulating fan works on 24 volt current and draws about 6 amps. A two-block bunker holding 100 pounds of dry-ice weighs 38 pounds and the four-block size, holding 200 pounds, weighs about 52 pounds.

### Air Freshener

Woodlets, Inc., Portland, Pa., has introduced a fast-acting air freshener known as OZIUM. OZIUM is fortified with propylene glycol and triethylene glycol, chemicals used in conditioning bomb shelters during the war. The manufacturer claims outstanding bactericidal qualities for the product. OZIUM is packed under pressure in small metal cylinders measuring 4¼" by 1¼" in diameter. A light touch of the lever control releases a fine mist-like spray. Each refill contains enough OZIUM to treat the air in about 50 average size rooms. The OZIUM has an "invigorating and pleasant fragrance" of its own.

### Marking Device

Mark-Tex Corp., 453-455 West 17 St., New York 11, N. Y., is marketing a simple marking device in tube form for purposes of identification, shipping, inventory and layout marking. It is supplied in a tube with a choice of tip sizes to govern the width of the marking.



The one-piece unit will mark steel, paper, wood, textiles, leather, glass or any material. It is guaranteed permanent. Fast drying inks in a variety of colors are available. Literature covering the product is available from the manufacturer.

### Chart Holder

"Chart Holders," c/o Langreen Co., 40-43 29th St., Long Island City, N. Y., has introduced the Bennett Airway & Instrument Chart Holder for pilots to hold approach procedure charts. It consists of a lighted round tray with an open front into which Jeppesen Airway Manual Charts or any 5½ in. x 8½ in. chart can be carried.

Lighting is provided by two shielded miniature lamps powered by flashlight

AMERICAN AVIATION

## NEW PRODUCTS

batteries. It is attached to the control wheel by snaps without interfering with hands on the wheel. Light intensity is controllable by a rheostat. Holder is 9 inches in diameter, 2 inches thick and weighs 1 lb. Price, \$14.95.

### Sealed Relay

Leach Relay Co., 5915 Avalon Blvd., Los Angeles 3, Calif., is marketing a hermetically sealed relay provided with a standard octal plug, a metal locating pin, and glass-to-metal seals on the plug pins. Combining light weight with midsize, the 637-57A relay provides



protection against atmospheric conditions normally encountered in aircraft. The relay, equipped with a 235 ohm continuous duty coil, double pole and double throw with a 3/16" contacts rated at 10 amperes resistive load, is capable of withstanding 10g vibration or acceleration, and 25g shock.

### Micro Altimeter

American Paulin System, Los Angeles, Calif., has announced the design of a MICRO-Altimeter graduated in intervals of one-foot over a range of 6000 feet. The company claims that the altimeter, designed primarily for surveying, is sensitive to altitude changes in inches



and accurate to one foot. Weighing only 4½ pounds, the MICRO-Altimeter is a portable tool encased in a rugged leather carrying case with hand and shoulder straps.

Included with each instrument is a magnifier, thermometer and full operational procedures. In addition to the M- model described, model M-5 with a range of 15,000 feet and graduated in intervals of 5 feet and Model MM-1 with a range of 5,000 meters graduated in intervals of one meter are also available.

#### CONTACTS

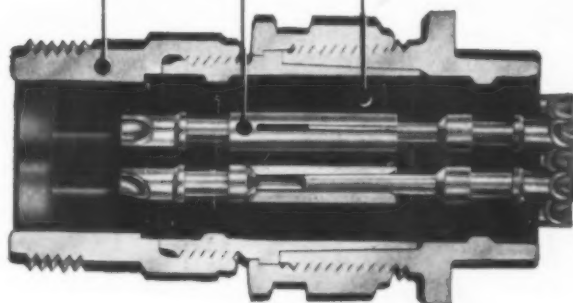
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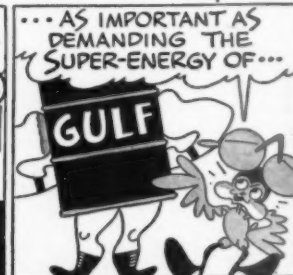
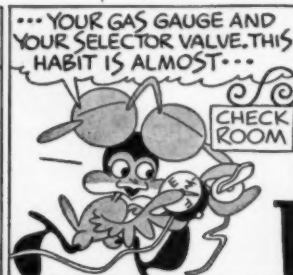
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# AIRPORTS

Including Features Formerly in AIRPORTS AND AIR CARRIERS Magazine

## Filling and Sealing Joints In Airport Rigid Pavements

By ROBERT C. BLATT

The filling and sealing of joints and cracks in rigid-type pavements is one of the most important items in a program of airport preventive maintenance.

At the present time, a great many airports all over the country having concrete runways, taxiways, aprons and other concrete areas, are sorely in need of resealing all expansion, dummy and construction joints.

There have been many pavement failures requiring extensive repairs and reconstruction which could easily have been avoided had a rigorous and adequate program of maintenance been enforced. Pavements are continuously exposed to deterioration by the elements regardless of the intensity or type of traffic using them. However, when pavements are subjected to the intensive stresses of heavy wheel loads, an effective preventive maintenance program is particularly important.

The accomplishment of major repairs to airport pavements is very costly. It causes unnecessary inconvenience and

may result in the complete breakdown of operations while repairs are being made. It is extremely important that all airport pavements be regularly inspected by qualified personnel and remedial action taken at the first indication of failure or deterioration.

Louis R. Inwood, director of aviation for Kansas City, Mo., realizing that prolonged inattention is expensive and dangerous, recently started a program of resealing all joints at the Grandview Municipal Airport, located about 17 miles south of Kansas City, Mo. This airport has approximately 360,000 ft. of joints in the runways, taxiways and apron, consisting of transverse expansion and contraction joints, and longitudinal construction and dummy joints.

The transverse expansion joints are spaced approximately 120 ft. apart and the transverse contraction joints 20 ft. apart. The longitudinal construction joints are spaced 25 ft. and the longitudinal dummy joints 12.5 ft. The contraction joints and dummy joints were formed by a flex-plane machine, in-

serting felt strip down to about one-third the thickness of the pavements, and were not edged.

**Infiltration.** After a careful inspection, Inwood found that unless the joints were properly sealed against infiltration of surface water, snow and other inert material that passes through the open joints, permitting seepage through to the sub-grade, heaving of slab panels, pumping action and spalling at the joints soon took place and resulted in damage and expense, beside slowing down flight operations.

There was found to be some pumping action taking place at these points, so holes were drilled through the pavement, water was forced out and an application of low penetration asphalt cement was pumped in the holes by means of an asphalt distributor until the voids were filled. The resealing of all the joints was then started.

Before the resealing process was started, Inwood and his engineers gave considerable study to the type of sealing material to use. From previous experience, they found that by using an asphalt cement or cut-back asphalt the material did not adhere to the sides of the joints during cold weather when contraction took place, and it extruded in hot weather when expansion occurred.

About two years ago, Kansas City



**NE / HIGH SPEED MACHINE** used for cleaning and regrooving concrete joints in runways, taxiways and apron at Kansas City's Grandview Municipal Airport. Eliminating difficult and slow work with picks, the machine rapidly removes old seal and cuts a clean, correctly-profiled groove that forms a tight bond with new seal.

**CLOSE-UP OF CUTTER HEAD** of newly-developed Tennant concrete grooving machine. 12 inch diameter cutter head revolves at about 2400 R.P.M. and can be removed and exchanged in 2 minutes. Range of cut widths is  $\frac{3}{8}$  inch to about  $2\frac{1}{4}$  inches. Cutting action is provided by forged alloy steel cutters.



WORKMAN AT GRANDVIEW AIRPORT complete resealing operations. Immediately after operator cleans a joint with the joint grooving machine, it is blown out with compressed air (at right) and then resealed (workman at left), using special pouring pot.

started to use a rubberized sealing compound, conforming to Federal Specification SS-F-336, on their concrete street construction, and found it to be very satisfactory. It gave a positive seal during all seasons of the year and did not extrude in hot weather. It was therefore decided to use the rubberized sealing compound on the sealing of joints at the Grandview Airport.

The manufacturers of this material advised against over-heating and insisted that a uniform heat be maintained. This operation was found to be very difficult with the use of an ordinary asphalt heating kettle, and there have been many instances of burning the material.

Upon receiving information that the U. S. Rubber Company manufactured a thermostatically controlled heating kettle having a double boiler type oil heat transfer, with motor-driven agitator, Inwood arranged for a demonstration of this equipment—called a "Sealz-Melter." Laboratory tests of samples of molten material taken definitely proved that there was no damage to the compound during the heating and melting process. Consequently, they purchased one of these units.

**Removing Old Seal.** Another problem confronting Inwood and his engineers was that of removing the old joint sealing material in an economical and efficient manner. Hand methods proved to be slow and expensive and it was found to be almost impossible to hand-clean the sides of the joints so that the sealing compound adhered to the sides and provided a positive seal.

After some investigation, a joint cleaning and grooving machine was located which was claimed to do an excellent job. A demonstration of this machine, which was manufactured by

the G. H. Tennant Co. of Minneapolis, Minn., was held at the Grandview Airport. After cleaning the old asphaltic material in approximately 13,500 ft. of all types of joints in a very few hours, they were satisfied with the performance and results obtained and promptly placed an order for one of the units.

This machine rapidly removes old seal and simultaneously cuts a clean, correctly profiled groove to form a tight bond with the new sealing material, with convenient self-propelling action and operated by one man. The joint-cleaning capacity of the machine, as reported by airport and highway maintenance engineers, ranges from about 5,000



JOINT CLEANED by the new concrete grooving machine at Kansas City Grandview Airport. Note the uniform groove and clean sidewalls, free of bituminous smears. Photo shows rear of machine with semi-enclosed battery, wide spaced wheels and adjustable height operating handle.

to 20,000 ft. per day. Speed in each case depends chiefly on the type of concrete, size and condition of joints, width and depth of cut desired, local traffic conditions, and on the individual skill of the operator.

Designed for fast, heavy duty work, the machine is powered by a 13.3 hp. air-cooled gasoline engine, equipped with self-starter, generator and storage battery. Cutting action is provided by a series of 4 in. forged alloy steel cutters mounted on a heavy steel cutter head that revolves at 2400 rpm.

By changing spacing of the cutters, joints or fissures from  $\frac{3}{8}$  in. to  $2\frac{1}{4}$  in. wide can be cleaned and regrooved to desired dimensions. Depth of cut is about  $1\frac{1}{4}$  in. To allow full use of the machine's joint-cleaning speed, an extra cutter head (installed in 2 minutes) is usually supplied. Worn cutters can then be replaced without holding up the machine. Correctly balanced on two wheels, the unit can easily be rolled out of the way of traffic. It weighs less than 700 lbs.

After the joints are cleaned they are blown out by compressed air to remove any loose material, and the sealing compound is immediately applied by use of special pouring pots which are furnished with the heating kettle.

Inwood reports that the cleaning and resealing of approximately 360,000 lineal feet of all types of joints at Grandview Airport was accomplished at an average cost of about \$0.04 per ft., which includes all labor, material, equipment, depreciation on equipment and supervision. The average force on this work consisted of one foreman, two truck drivers and five laborers. The daily production was from 15,000 to 20,000 ft. of joint cleaned and resealed.

## CAA Regional Offices Get More Airport Authority

A further streamlining of procedures under which the Federal Airport Act is administered was effected last month by granting CAA regional offices greater authority than they had previously.

Under the new policy, the regional offices have full authority to withdraw tentative allocations of Federal funds after 90 days in cases where local sponsors are either unwilling or unable to participate in the program. Previously, withdrawals of funds were made in Washington on the recommendation of the regional offices.

The regional offices also were given responsibility for the approval of negotiated claims between local sponsors and contractors, another function formerly carried out in Washington. Certification that labor laws have been complied with on an airport project, formerly made by the district airport engineer, is now made by the contractor on the project.



THIS \$3 MILLION administration building will be on public view for the first time when the Port of Seattle formally dedicates the Seattle-Tacoma International Airport at Bow Lake on July 9.

## Seattle-Tacoma To Dedicate Airfield

Seattle-Tacoma International Airport, at Bow Lake, Washington, will be formally dedicated on July 9 with ceremonies and an air show expected to draw a crowd of 100,000 persons. The field, under construction since 1943, cost \$11,000,000 and is claimed to be one of the finest air terminals in the country.

Situated 12 miles south of Seattle and 19 miles north of Tacoma, the airport is a product of cooperative effort, but is actually owned and operated by the Port of Seattle, of which J. A. Earley is president and Col. Warren D. Lampert is general manager. The site was selected by the CAA and was purchased in 1942-1943 by the Port of Seattle for \$660,000 with the help of a grant of \$100,000 from the Port of Tacoma, the City of Tacoma and Pierce County.

Unlike many air terminals, which grow by piecemeal expansion, Seattle-Tacoma International was planned from the beginning for utility, convenience and future needs. The designs were drafted by the Port of Seattle engineering staff under the supervision of Chief Engineer George T. Treadwell, who had previously made a tour of the major airports of the country and had studied their good and bad features.

**\$3 Million Building.** The administration building, which cost \$3 million, is an outstanding example of modern terminal architecture. The general layout is convex, comprising a six-floor section flanked by three-story north and south wings swept back at an angle of 22½ degrees. An open observation deck runs across the entire field-side face of the building, while inside the center section are the main waiting room, ticket lobby, baggage counter, passenger con-

course, offices, weather station and control tower.

The north wing is occupied by ticket counters, shops, offices and the main dining room. The south wing houses offices and miscellaneous passenger conveniences such as coffee shop, barber shop, beauty salon, bar and cocktail lounge, showers and dressing rooms, lounges and nursery.

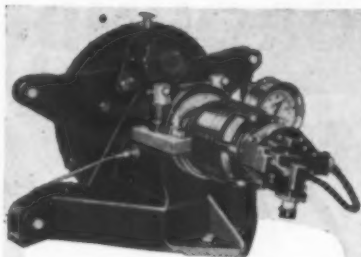
The airport has eight plane-spotting positions served by eight loading gates, and has space available for eight additional positions when needed. Serving the airport at the outset will be Pan American Airways, Northwest Airlines, United and Western.

## Babb Airport Lease Deal

The Babb Co., which recently leased its hangar at the Newark Airport to the National Maintenance Corp. on a three-year contract, has 13 years to go on an airport agreement that probably is unduplicated in the advantages of its terms by any operator's agreement at a major air terminal.

The agreement was part of the deal whereby Babb acquired the hangar from Eastern Air Lines. In addition to the favorable financial terms, which hold over from the days when the city of Newark operated the airport, the agreement allows Babb a wide latitude of operations, permitting it to do practically anything except run a scheduled airline into the airport. As an example, the port authority gave Standard Oil an exclusive gasoline contract at the Newark Airport. But it doesn't affect Babb, who still retains his right to sell gasoline. Babb handles Shell.

As a part of the leasing agreement with National Aviation Maintenance, Babb has an option to acquire 51% of the capital stock.



## QUICKER STARTS, GREATER STARTER DEPENDABILITY WITH GREER STARTER TESTER

Many a flight has been long delayed, many a mission failed to materialize because an engine starter failed to turn the engine over at the critical moment.

To overcome these costly delays and failures the combined efforts of Jack and Heintz and Greer Hydraulics were used to design and manufacture the low cost, universal Starter Tester shown above. This unit offers complete facilities to test all Aircraft Starters Types I, II, III, and IV with either 6 or 7 inch pads including Packard Merlin Starters and Jack & Heintz Retraction Motors.

Ever on the alert for new requirements of the aviation industry, Greer Hydraulics is proud to add this tester to its long list of aircraft maintenance and test machines which it offers to the aviation industry.

Greer Hydraulics is the sole manufacturer of a complete line of maintenance and test machines. Write or call today for additional information stating your maintenance problem.

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## AIRPORTS

### Crested Wheat on Airfields Stops Erosion, Makes Money

Budget-conscious airport managers who find soil erosion and dust and weed control measures accounting for substantial amounts on their expense ledgers might give thought to an expedient adopted by Herman C. Gassert, manager of Stapleton Airfield, Denver's Municipal airport.

By planting crested wheatgrass on some 800 to 900 acres of the airport property, Gassert expects to keep down dust, weeds and erosion at very little cost.

Crested wheat, particularly valuable for regrassing abandoned croplands, will, in Gassert's opinion, be much in demand in the next few years as increasing numbers of farmers cut their wheat acreage and replant with crested wheatgrass to build pasture land. Seed will be needed for this replanting, and Gassert hopes to meet some of this need from wheat planted between the runways, on other dirt areas inside the airport proper, and on city-owned land adjacent to the field.

Crested wheat, he points out, now sells for \$48 to \$61 per 100 lbs., depending on the type used, whereas seed from the winter wheat heretofore planted on the airport brings only about \$4.00 per 100 lbs., just enough to pay for labor involved.

**Other Advantages.** Besides the monetary consideration, there are other advantages in the use of crested wheat, according to the Denver airport manager. These include longer productive life (it has been known to yield well for 20 to 25 years without replanting); resistance to drought (it has survived the most severe periods of dry weather and makes the most efficient utilization of soil moisture); hardness (it is entirely resistant to all extremes of cold and can also stand withering heat); and it crowds out weeds where moisture supply is limited.

Furthermore, the crested Wheatgrass has good seed habits, maturing early and yielding well. A fair average yield of seed when grown in rows is 150 to 250 lbs. per acre, and under more favorable conditions 400 to 500 lbs.

Gassert thinks airport managers, particularly in the northern Great Plains area, might well give thought to growing crested wheat on unused airport acreage. Information about the wheat may be obtained from the U. S. Dept. of Agriculture (Leaflet No. 104) or from Herman Gassert, Manager, Stapleton Airfield, Denver 7, Col.



Gassert

## Airport Notes

Macon, Ga., will be the site of the next meeting of the Southeastern Airport Managers Assoc. Sessions will be held at Cochran Field. The dates are July 20-21. Other news from the south-east: B. M. Thomson, a former city engineer, is the new airport mgr. at Charleston, S. C.; Valdosta, Ga., has dedicated a fine new airport administration building; Nashville's Berry Field has new high intensity runway lights; Joe Hightower, operator of McGhee-Tyson Airport at Knoxville, has completed a big job of grading and also has erected a new steel hangar.

A statewide airport planning conference will be held in California in late July or early August under sponsorship of the Institute of Traffic Engineering, Calif. Aeronautics Commission and U. of C. Extension Service. It will be held on the campus of the University's College of Agriculture at Davis . . . The 1949 issue of the Pacific Coast and Inland Aviation Director, devoted to aviation activities in Arizona, Calif., Ore., and Wash., is now available at \$1 per copy from 3303 Tyler, Temple City, Calif.

Glenn C. Richards, who was chairman of the Detroit Metropolitan Aviation Authority, resigned last month under pressure because he was committed to allocating all the city's available funds for airport development to the Detroit-Wayne Airport at Romulus. The majority of the aviation board and the city administration favors development of the international site across the river at Windsor, Canada.

Capital Airport, at Springfield, Ill., reports that more than 35,000 persons attended its first annual Open House, sponsored by the Junior Chamber of Commerce, with the assistance of Ameri-

## AIRPORTS

can Airlines, the Air National Guard and others. It's a Class IV field, with three 5,300-ft. lighted concrete runways.

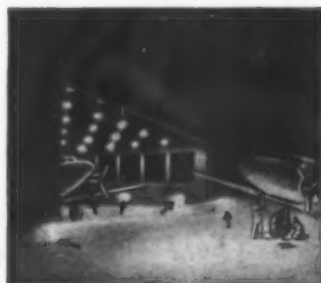
The 1949 revised edition of the Florida Airport Directory is available from airports in the state or from the State Chamber of Commerce office, Hildebrandt Bldg., Jacksonville . . . The Indiana Aeronautics Dept. plans to distribute the 1949 Indiana airport director and map sometime this month.

## CAA Airport Aid Offers

For the two-weeks period ended June 10, Federal-aid airport grants totaling \$1,822,718 were made to 18 communities by the Civil Aeronautics Administration, as follows, with class shown in parentheses:

Arizona: Yuma County Airport (6), \$7,320.  
Colorado: Kremmling Airport (3), \$16,000.  
Indiana: Gary Municipal (3), \$166,000.  
Minnesota: Minneapolis (Crystal Airport) (1), \$81,500.  
Nebraska: Minden Mun. (2), \$11,500.  
New Hampshire: Dillant-Hopkins Airport, Keene (3), \$23,910.  
New York: Idlewild Airport (7), \$100,000.  
North Dakota: Dickinson Mun. (4), \$18,000; and Rolla Mun. (1), \$6,500.  
Oklahoma: Will Rogers Field, Oklahoma City (4), \$26,293.  
Pennsylvania: Philadelphia International (5), \$570,000.  
Puerto Rico: San Juan International (5), \$250,000.  
South Dakota: Milbank Mun. (2), \$17,520; Webster Mun. (2), \$15,219.  
Tennessee: Memphis Mun. (5), \$340,000.  
Texas: Laredo Mun. (5), \$15,250.  
Utah: St. George Mun. (2), \$22,551.  
Washington: Yakima Mun. (4), \$135,155.

These grants increased the total through June 10 to 798 and the Federal funds involved to \$80,121,616.



## FOR APRON AND WIDE ANGLE FLOODLIGHTING

For years, the REVERE Organization has collaborated with Airport planners and Aeronautical Engineers. Today, the REVERE Line of Airport Lighting reflects the "know how" acquired through this collaboration.

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## More Speed, Less Spillage



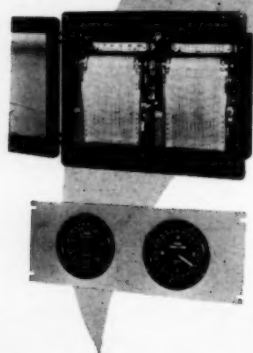
Tractomotive Corp., Deerfield, Ill., is now manufacturing a materials-handling loader known as the Tracto-Loader. It has a one-half cu. yd. standard bucket mounted over driving wheels. Providing good traction and easy steering, this design minimizes operator fatigue.

The TL-W Tractor-Loader is 12 ft. long with the bucket down and 5 ft. 9 in. wide (outside tire measurements). The

manufacturer claims that loading is speeded up and spillage minimized by use of a forward crowding action and automatic tilt-back feature used for loading instead of ramming of the material.

The bucket is hydraulically operated and positively controlled. Complete or partial dumping can be accomplished. Sold exclusively through Allis-Chalmers industrial dealers.

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## Extra-responsive Cups and Vanes

## Trouble-free, Weather- proof Construction

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You'll find complete operation, installation, and performance data in Bulletin 6000—plus information on GURLEY'S PILOT BALLOON THEODOLITE, of special interest to weather stations. It's yours for the asking. Send for it today.

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Are Distributed to Airports  
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Pilots want *and need* exact wind information. All-weather flying increases importance to ground crews, too.

You can give it to them with Gurley wind instruments—accurately, continuously, within 2% over 0-100 m.p.h. range for velocity, 3° for direction. You get instantaneous response to wind shifts, lull or gust conditions. Here's why:

Cups and vanes are precision-balanced at the Gurley plant—where N. B. S.-approved standard weights and measures are manufactured, too. Separate transmitters and circuits for direction and velocity simplify installation and inspection.

Bronze or aluminum for all exposed parts—stainless steel shafts—sealed ball bearings with all-weather lubrication—stable electrical components—aircraft type electrical connectors.

You get one Transmitter and one Indicator for either direction or velocity—add Recorders and extra Direction and Velocity Indicators as required—at any time.

## AIRPORTS

### Alaska's First City-Owned Terminal Opened at Juneau

Alaska's first city-owned airport terminal building has been formally opened at the Juneau Airport. The new terminal building was constructed with \$90,000 allocated from the territorial gas tax fund by the Alaska Board of Road Commissioners, plus \$50,000 obtained from revenue bonds voted by the people of Juneau in a special election.

Completion of the modern terminal building represents the culmination of Juneau's fight to save its airport. Previously, it obtained congressional legislation allocating funds for maintenance of the airport and specifically authorizing its operation by the CAA, thus ending a threat the field would no longer be maintained.

Nine miles north-west from Juneau, the airport has a 5,000-ft. runway, but the surrounding mountains and rough terrain forbid installation of a beam and instrument approach. It was used during the war by the Navy, but when CAA built an all-weather airport at Gustavus, 40 air miles west of Juneau, with funds allocated by the War Department, and after the war was made responsible for the operation of both airports, it put the Juneau Airport in the status of an intermediate landing field only.

The CAA notified the city that with the commissioning of the Gustavus field all requirements for the operation of the airway in the district had been met and the Juneau Airport was no longer needed as an airway aid. It said the Juneau field would be maintained only on a temporary basis until the city could acquire it under the Surplus Property Act. The city was financially unable to assume the cost of operation and maintenance and so advised the CAA, which in turn said services to the field would be among the first to be discontinued if a retrenchment in Alaskan operations became necessary.

The CAA also rejected requests for financial assistance under the Federal Airport Act unless the city accepted title to the airport along with responsibility for its operation and maintenance.

The field was first developed in 1935 by Pacific-Alaska Airways, a subsidiary of Pan American Airways. In 1945, Pan American conveyed its interest in the land to the Navy.

A new pamphlet titled "Airport Design" is available from the Govt. Printing Office, Washington, at 30c per copy. It's a CAA publication covering the broad general principles of airport planning and design, including chapters on heliports and seaplane bases. It also contains drawings of a variety of model airport layouts and charts and graphs on a number of related subjects.



# PRETESTED IDEAS

## Rolling Stock Room

A SIMPLE yet time-saving idea is this compartmented truck, the brain-child of Douglas A. Harrison, a supervisor in PAA's Miami Component Overhaul Base, for bringing spare parts and tools right to the workers' benches. Workers who formerly had to go back and forth between their machines and various supply rooms now have the necessary equipment brought directly to



them. 30 of these compartmented trucks are used. They are towed, train-like, as

rolling stock rooms from one section of the vast overhaul base to another.



## Control Tower Down Light

THE NEED for a satisfactory method of lighting airport control tower interiors has long been felt. Incorrect and poor lighting has been a constant source of trouble and discomfort for tower operators especially since the traffic handled by most towers has increased tremendously in the past few years. The problem is to provide the necessary amount of light for the several position desks, ILS monitor, etc. and still maintain darkness sufficient for "dark adapting" the operator's eyes so that they can work most efficiently.

J. J. Flannery (center in picture), senior airport traffic controller at the New York International Airport, designed a light which has worked satis-

factorily for almost a year. The picture shows one of the two lights of this type installed in the N. Y. International Tower. Flannery had the lights made in a local radiator cover shop.

Each light unit is a little over 48 in. long and contains a 48 in. 40 watt white fluorescent lamp. It is 5 in. wide and 18½ in. high (toward outside) and 15 in. high toward the inside of the tower. The bottom has an angle of 45 degrees.

Flannery is planning to improve the units by painting the inside surfaces a dull lamp black finish instead of the present slightly glossy surface; also by adding an "egg crate" type aluminum baffle louver next to the lamps to reduce the possibility of side glare.

## Bumps Reduce Speeding

TRAFFIC "BUMPS" are installed at two locations in the service concourse through the basement of the Administration Building at the Washington National Airport in order to make traffic slow down for safety reasons.

The bumps were made from three inch by eight inch boards, well rounded on the top side so as not to damage tires. Boards are lagged to the concourse paving material. A flashing red vapor-proof bracket light is mounted on the wall over each bump to warn drivers.



# Beech Inspection Plan Builds Good Customer Relations

Beech Aircraft Corp. last week passed the half-way mark in what it believes to be an exceptional customer relations project—the free inspection of all Beechcraft Bonanzas by factory representatives at Beechcraft distributors' hangars.

As of last week, factory service teams had visited 21 Beechcraft distributors and had inspected approximately 1,000 Bonanzas. By fall, it is planned that the program will have been extended to include all of the more than 2,000 Bonanza owners in this country.

Physical operation of the program, which at this writing appears to be an unqualified success, is fairly simple. Approximately 10 days before sending a two-man factory service team to the headquarters of a certain distributor or direct dealer, the company mails out special invitations to each Bonanza owner in the territory, inviting him to bring his plane in for a free inspection and to ask any questions he may wish to ask concerning his Bonanza's operations.

The distributor or dealer then makes a follow-up to arrange a definite schedule for each plane several days prior to arrival of the factory team.

**Complete Inspection.** When an owner arrives with his plane, he is greeted and given a general briefing on the purpose of the service program, and his Bonanza is then gone over completely. The factory men check over 90 separate items for proper adjustment, operation and condition, such as landing gear, engine accessories, fuel lines, baffling and controls.

A completed inspection form together with pertinent remarks on the general condition of the plane is given to the owner, along with a letter recommending such maintenance work as should be done to assure a maximum of trouble-free performance. When certain service is recommended and has been performed, the distributor sends a special letter of thanks to the Bonanza owner about a week later in connection with a service follow-up program of the company.

The follow-up letter has a detachable tab conveniently addressed to the Beechcraft Engineering Service Division and marked for the owner to make his comments on the service work. The factory then follows up on any reports of service deficiencies and takes such corrective action as may be necessary, the goal being to assure Bonanza owners that the service of Beechcraft distributors and dealers is of top uniform quality.

The program was started in the spring with one two-man team, but it met with such an enthusiastic response that another team was soon added. One team is composed of R. B. Bosworth and V. L. Gaston, the other of Bill Sampson and J. M. Roach.

Letters received by Beechcraft officials from Bonanza owners and from distributors have convinced the company that it has laid the foundation for a new era in customer relations and private aircraft servicing.

## Primary Flight Training Proposed in 4-Place Planes

In the interests of the primary flying student who has air transportation for an objective, the CAB's Bureau of Flight Safety Regulation has proposed a Special Regulation to be in effect for one year that would permit training in 4-place or larger aircraft.

This regulation would allow any flying school approved by the Administrator to adopt a curriculum wherein the student can substitute 30 hrs. of observer time in the 4-place or larger plane for ten of the 15 hrs. of dual time required in the current CAR.

Outlining the proposal, John M. Chamberlain, Director of the Bureau of Safety, says:

"Section 50.110 (a) of the current Civil Air Regulations requires that a primary flying school shall provide at least 35 hrs. of flying in a spinnable aircraft in accordance with a curriculum approved by the Administrator. Such a curriculum requires . . . a minimum of at least 15 hrs. of dual instruction, of which 8 hrs. shall be given prior to the student's first solo flight, and at least 13 hrs. of solo flight time.

"The suggested curriculum would require the student to have not less than 10 hrs. of solo flight time, nor less than 15 hrs. of dual instruction time, and not more than 30 hrs. of observer time.

**Solo Requirement.** "The solo flight time could be acquired in any type airplane except that the student would be required to solo every type of airplane in which he received instruction from the flight instructor."

Chamberlain suggests that ". . . three students would ride a total of 45 hrs. each in a 4-place or larger plane accompanied by a flight instructor and that each student would pilot the airplane 1/3 of the time, or 15 hrs. . . .

(to be) credited as dual instruction time. During the balance of the 45 hrs. he would act in the capacity of an observer, would receive instruction in dead-reckoning navigation, and would be familiarized with traffic control practices and procedures at various strange airports. It is believed that a student would benefit from this type of observation."

This proposal was made with the belief that a pilot planning on air transportation will eventually turn to the more practical 4-place or larger airplane and would be a safer pilot if his training had prepared him for it.

Giving the reason for the Special Regulation, Chamberlain says "The Bureau recognizes that the suggested course of training has merit, but it does not at this time have sufficient information to evaluate the advisability of incorporating such a curriculum in the CAR as a mandatory requirement."

Commenting on the proposal, AOPA's J. B. Hartman, Jr. said "We have been suggesting just such a training curriculum for several years. We believe the training of pilots in larger airplanes will emphasize the possibilities of the personal plane for cross-country tours, vacation trips and business calls to distant places."

Robert Sanders, president of Sanders Aviation, Inc., Riverdale, Md., expresses some of the objections to the curriculum that will be brought out when the proposal comes up for approval.

Most of them exist as a result of the greater cost involved to both the operator and the student. They are (1) initial cost of the 4-place or larger airplane; (2) cost of maintenance; (3) cost to the student for flying time; (4) doubt as to the desire of the student to pay anything for observer time.

Comments on the proposal should be directed to the Bureau of Safety Regulation, Civil Aeronautics Board, Washington 25, D. C., before July 11.

## Landing Bounces Eliminated By Aeronca Oleo Shock Strut

Aeronca Aircraft Corp. has announced development of a new oleo shock strut unit known as the "No-Bounce" landing gear, and the company claims a plane can be flown into the ground at a steep angle or dropped in from several feet in a complete stall and will not bounce if equipped with this gear.

The gear is available either as optional exchange equipment f.a.f. Middletown, O., on new aircraft at an additional cost of \$15, or for field conversion at a cost of \$78 per set of two oleo units. Units are available now only for the Model 7 series Aeronca Champions and Model 11 Chiefs.

# Aviation Sales and Service

By Robert C. Blatt



**Flat Rate Rentals:** With the tapering off of G. I. flight training, more and more operators are realizing the need for increasing the hours of utilization of their airplanes. One plan rapidly gaining favor is the setting up of flat rates for renting planes by the day, with reduced rates as the time is increased. At the Armonk, N. Y. airport, Dave Finger has just announced a plan which he believes will be very popular and will keep his equipment busy. He rents a 120 or 140 Cessna, complete with two-way radio, lights and other cross-country equipment for \$25 a day for the first two days. The third day to the sixth day is \$22.50 a day and the seventh day and thereafter is \$20 daily.

He is planning a similar rate for Stinson Voyagers starting at \$35 daily for the first two days and reducing the rate accordingly as the number of days increases. The customer, of course, buys all the gas and oil. Finger doesn't believe this rental plan will interfere with plane sales.

**Glamor Sells:** Operators having glamor around the place in the form of keen-looking sales or office girls or secretaries should take a lesson from the novel merchandising method used by an aggressive firm—Air-Parts, Inc., of Glendale, Cal. During the past few months, buyers of aeronautical supplies have become acquainted with "Margie," the Air-Parts sales girl. She is not only cute but has attracted increased sales for her employers.

Simulated hand-written letters accompanied by photos of Margie in various suitable poses, are being mailed out every two weeks. Each of these mailings feature a different special item on which Air-Parts, Inc., have established an attractive low price. This method has brought a flood of response from all over the nation.

**'Still Available' Signs:** Contrary to the general impression held by many fixed base operators, there are many good and eligible prospects for G. I. flight training who are not aware of the fact that it is still available. This is probably due to the unfavorable publicity G. I. flight training has received for some time. Murray Greenman and Tom Hintze, manager-operators of the Westair Flying School at the Westchester County Airport, White Plains, N. Y., recently found proof of this fact. They had "G. I. Flight Training Still Available" signs made and posted them conspicuously at the recent Westchester Airport Air Show, also at church bazaars, dinners, etc. and in surrounding town store windows. Within a short time the inquiries have already increased 40 per cent on G. I. flight training.

**Omni Range Navigation Now Feasible:** Dealers and distributors of Omni receivers and VHF transmitters for privately-owned aircraft, who have met sales opposition from pilots and owners who believe that there are not enough omnidirectional radio ranges operating on a commissioned basis to make these sets worth while at this time, can use the recent 15,000 mile sales trip findings of James M. Riddle, president of National Aeronautical Corp., Wings Field, Ambler, Pa. Riddle covered 21 states in the Narco Beechcraft Bonanza in 12 days, contracting 151 omni range stations and using VHF transmitting and receiving equipment exclusively for aircraft to ground communication and navigation.

"Throughout the entire trip," Riddle states, "I found sufficient omni range stations in operation, commissioned and non-commissioned, to prove unquestionably that omni-range navigation is feasible, practical and simple for cross country flying today on a nationwide scale."

**Stinson Developments:** Plans are being made by the Stinson Division of Piper Aircraft Corp., for developing and producing new Stinson models intended to provide new utility for corporate flying. Meanwhile, sales are being pushed vigorously on the 1949 Piper-Stinson.

## Briefing the News

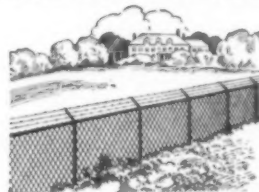
Richard Y. Dakin is president of Pacific Helicopter Co., 687 S. Arroyo Parkway, Pasadena, a new firm organized as Southern Calif. distributor for the Hiller 360 helicopter . . . Robert S. Smith, formerly of Bedford Village, N. Y., has bought the Stull Flying Service at Fairbury, Nebr., and is operating it now under the name of the Fairbury Flying Service.

A simple computer to aid pilots and students in recognition of light signals from control towers has been devised by Joseph L. Clothier, of Tucson, Ariz. Called the "Handy Light Signal Guide," it clearly and quickly points out the proper response to any signal. Its universal use would contribute much to a happier relationship between student pilots and control tower operators.

Several Piper distributors and dealers are reported to have followed the lead set by Safair Flying Service of Teterboro in reducing monthly hangar rental for the Piper Clipper by \$5 because the short-winged Clipper takes up considerably less space than the average lightplane, is also easier to handle.

Bell Aircraft Corp. has formed a wholly-owned subsidiary—Bell Aircraft Supply Corp.—which will handle the sale and service of helicopters and parts on the West Coast and will carry on helicopter field operations, including oil surveys, in Louisiana and Texas.

## STEWART AIRPORT FENCE



Stewart Style 3TH Chain Link Wire

Protects property and equipment. Controls crowds. Prevents injury to spectators. Stewart Fence is available in a wide range of styles, heights and weights in both Iron and Chain Link Wire to meet every requirement. Other Stewart products for airports include: Steel Folding Gates, Wire Mesh Partitions, Wire Window Guards, Settees, etc. When writing for literature please mention products in which you are especially interested.

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Experts in Metal Fabrication Since 1886

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and WIRE  
FENCES



# Continental's First Hostess Conference Pays Dividends

By ERIC BRAMLEY

For two days last month, passengers boarding Continental Air Lines were considerably surprised to note that the company had evidently made a fast switch. There were no hostesses aboard the airplanes. Instead, the cabin chores were being handled by male attendants who had a slight air of uncertainty about them.

Then the passengers found explanatory notes at their seats. The airline's hostesses, the notes said, had been called to Denver for the company's first hostess conference. The male attendants were employees from the stations, traffic offices, etc., who had been drafted to fill in while the girls went to the meeting.

Never before in the history of the industry, as far as Continental knew, had all hostesses of one company been gathered in one city for a meeting. Therefore, the airline's officials had their doubts about the success of such an operation, and pulling all the girls off the line wasn't a spur-of-the-moment deal. It was done after considerable discussion and hesitation, but these same officials are now congratulating themselves because they believe that the meeting is going to pay big dividends.

**Six Explains.** Reasons for the meeting were these: Continental, like all airlines, has sales-traffic conferences, but the hostesses have never been able to attend. They'd seen personnel pepped up after such meetings, but never felt very pepped up themselves, from hearing about the gatherings second-hand. They'd never had a meeting of their own.

"We decided," said Bob Six, Continental's president, "that it was about time we got them all together. They were sort of left out of everything. We wanted them to know that they were on the ball team."

So, on the afternoon of June 7, eastern division hostesses based at Tulsa, and southern division girls from El Paso, flew to Denver to join the hostesses based there. Out of 41 CAL hostesses, 39 were present (one absent because of an emergency at home, the other undergoing an operation). The airline's hostess duties were left in the willing, if sometimes faltering, hands of the men.

As expressed by Six, the meeting had a baseball flavor. "It's one ball team," was the theme, and the girls all received baseball caps, with CAL initials on them, and midget-sized bats.

**Slogans.** Around the walls of the meeting room in Denver's Albany Hotel were slogans, the most eye-catching of which said: "Samson was just a piker. He only killed a thousand men with the jawbone of an ass. Every hour in the day, ten thousand sales are killed with the same weapon."

Another said: "Here, every employee is an assistant to the president."

Still another: "A great deal of good can be accomplished if one isn't too particular as to who gets the credit."

At the meeting, which was conducted by Stan Halberg, CAL's general traffic and sales manager, each department head of the company talked, stressing the importance of the hostess in sales, traffic, operations, customer service, publicity, public relations, etc. Tips were given on sales technique, and also on



ONE SKIT FEATURED Hostess Clarice Oelke and passengers Joe Rubin (Larry Bishop, passenger service department), a union organizer on his first air trip in the west, and Tex Longhorn (Tom Dempsey, interline and agency director), a big cattle and hay man from Texas.

how to use the various sales tools that are furnished.

On the latter subject, R. L. McGrew, manager of schedules and tariffs, told the group: "The hostess' best friend is the good ol' OAG. To the newcomer that means *Official Airline Guide*, the best instrument to build up any airline's business. To the experienced employee, OAG also means *Our Airline's Good Book*, the Salesman's Bible." He went on to give them a thorough briefing on what is in the book and how to use it.

Also on the program was a special demonstration of how to apply makeup, with Elizabeth Arden representatives putting on the show. In between some of the talks, Tom Dempsey, interline and agency director, had arranged for skits with humorous angles. Several of the airline's departments were lampooned, and one skit put the hostess' union on the spot. The meeting was climaxed



THIRTY-NINE HOSTESSES shown as they attended the Continental Air Lines hostess' conference in Denver.

by a banquet, attended by company officials.

"The meeting went over big," said Bob Six. "Of course, we realize that a big company like United or American couldn't swing the same kind of a deal—they have too many hostesses and they're scattered all over the country. But it worked perfectly for us, and the girls got a big kick out of it."

So the hostesses returned to flying the line and, the company believes, are doing a better job and are happier. And the passengers are undoubtedly happier too.

## CAB Allows 96 Overseas Round-Trip Charter Flights

Five U. S. air carriers will operate at least 96 charter round-trips carrying passengers across the North Atlantic to Europe and the Middle East this summer under special exemptions granted them by the Civil Aeronautics Board.

Transocean Air Lines will operate almost half (44) of the special flights. It holds a contract with Youth Argosy, Inc., to transport students to Europe for educational purposes, and will participate in the westbound transportation of displaced persons from Europe to the U. S.

Seaboard & Western Airlines, which also has a contract with Youth Argosy, was granted an exemption permitting 70 one-way flights between the U. S. and Europe and between Europe and the U. S. from June 6 through Sept. 21.

Alaska Airlines is authorized to operate 10 round-trip flights on a charter or special service basis carrying passengers between the U. S. and Israel during June to October, inclusive, with most of its passengers being booked through United Israel Tours.

Trans-Caribbean Air Cargo Lines, Inc., is authorized to operate six round-trip passenger flights between New York and Tel Aviv, Israel, prior to Sept. 27, and Coastal Air Lines was authorized to operate one flight between New York and Lydda, Israel, under an agreement with Heschalutz Organization of America, Inc.

## Braniff Air-Sea Fares

Air-sea fares for travel to and from South America have been approved by the CAB. The cooperating carriers are Braniff Airways and Mississippi Shipping Co. (Delta Line).

Braniff fare will be one-half the applicable round trip fare and the shipping company will grant a 10% discount for travel on its lines. It is expected that the steamers will handle most of the north-bound traffic with Braniff taking most of the south-bound traffic to relieve the space problem on steamers going south.

JULY 1, 1949

# Over the Counter

By Eric Bramley



## Sales Promotion

**C**ONTINENTAL Air Lines' latest sales promotion idea is the placing of weekly reports on fishing in Colorado in its downtown ticket office windows and in prominent spots at airport ticket offices. The reports, which include condition of streams and whether fishing is good or poor, are obtained from the state game and fish department and sent weekly to 27 CAL cities via teletype . . . United Air Lines is promoting the idea of flying to the factory to pick up a new car, then driving home on a vacation. From western points, savings on car shipping and handling charges are enough to pay for the flight to Detroit plus return expenses, UAL says, adding that several manufacturers are now making factory deliveries . . . United has just issued two booklets. One, entitled "Lines to Ladies," tells women how to make reservations, what to wear, advantages of taking children by air, etc. The other, "Hawaii," describes the islands, where to go and what to see.

Pan American Airways' booklet, "New Double Decker Clipper," describes the Boeing Stratocruiser . . . American Airlines is promoting a series of summer and fall vacation tours to Mexico, New England, Nova Scotia, Bermuda and Hawaii. In cooperation with travel agents, company is offering package tours to be sold through its reservations offices, just like transportation. The tours can be bought in conjunction with transportation on the family fare plan . . . Braniff Airways is offering three "vacation specials" (tours) to Colorado ranch country.

An excellent promotional booklet, "I Can't Afford Not to Fly," is being distributed by Pioneer Air Lines to 30,000 businessmen and others in the southwest. It's done in interesting narrative style and also contains comparison charts on air, rail and auto. It puts across the economy of flying in a very effective way.

## Passenger Service

**N**ATIONAL Airlines is now speeding up connections for international travelers at Miami by eliminating baggage checking delays. Through checking from point of departure to final destination has been worked out for connecting National, Pan American and Panagra flights . . . National has decided that at least one of the stewardesses on each DC-6 flight, and DC-4 flights on Havana schedules, shall be fluent in the Spanish language. Accepted candidates will be trained in the airline's Miami stewardess school.

In order to take care of crippled or incapacitated passengers, Eastern Air Lines has designed a stretcher-type bed which can be installed in the four-place private compartment forward of the main cabin in its Constellations. The bed occupies three of the four seats, leaving one available for a person attending the incapacitated passenger.

## New Services

**C**HICAGO & Southern Air Lines on June 27 was to increase service between Houston and Caracas, Venezuela, from four to seven round-trips weekly. C&S has also started service to Pine Bluff, Ark., one round-trip daily . . . TWA, starting July 3, will offer two round-trips weekly to Lydda airport, Israel . . . Western Air Lines hopes to open service to Edmonton, Alberta, this summer, as soon as operational details can be cleared with Canadian Air Transport Board. WAL received Edmonton rights in recent U. S.-Canada air agreement . . . Western has opened non-stop Convair service between Los Angeles and Portland. Flight continues on to Seattle . . . Challenger Airlines was to start flights to Vernal, Utah, on July 1, same date the city dedicates its new airport . . . Swissair will operate nine additional trans-Atlantic roundtrips this summer, four between last week of June and middle of July, and five in September.

## Traffic

**T**RANS-TEXAS Airways, which CAB has tentatively decided shouldn't continue in business past May, 1950, when its feederline certificate expires, carried 3,858 revenue passengers in May, a 191% increase over same month last year. Passenger-miles were up 212%. Traffic demand has necessitated putting on a third daily round-trip San Angelo-Dallas via Ft. Worth and Brownwood . . . "Most dependable seven days" in its history were chalked up by United Air Lines during week ended June 14, when 97% of all flights originated on time or within 15 minutes of schedule, and 82½% arrived at destination on time or within 15 minutes . . . United's family fare plan has accounted for about 10% of revenue passenger-miles since it went into effect six months ago . . . British Overseas Airways Corp. has reduced round-the-world fare via Australasia from \$1,979.70 to \$1,886.

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## U. S. Domestic Airline Traffic for April

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR	MAIL TON-MAILES	EXPRESS TON-MAILES	FREIGHT TON-MAILES	TOTAL TON-MAILES	AVAILABLE TON-MAILES	% AVAILABLE TON-MAILES USED	REVENUE PLANE MILES	SCHEDULED MILES	% SCHEDULED MILES COMPLETED
American	286,380	129,797,000	186,856,000	69.44	784,260	360,190	1,179,398	17,008,076	26,624,957	63.88	4,598,830	4,457,110	99.38
Boeing	51,931	17,250,000	30,166,000	57.18	86,320	60,902	96,635	1,901,754	3,683,007	51.64	946,216	943,055	99.46
Capital	109,697	32,600,000	54,409,000	54.87	79,363	104,265	710,555	4,006,232	7,686,735	52.12	1,730,464	1,658,528	96.94
Caribbean	8,292	622,000	1,365,000	45.57	715	2,269	2,269	52,882	127,353	41.52	55,734	55,795	99.10
C & S	26,920	9,828,000	16,227,000	60.57	47,123	40,362	49,552	1,080,052	1,884,288	57.32	628,664	616,903	99.67
Colonial	15,088	4,064,000	6,476,000	62.75	8,027	3,856	14,584	435,355	842,377	51.68	310,122	302,530	98.68
Continental	15,520	5,406,000	13,901,000	38.89	19,011	7,920	30,182	575,007	1,413,670	40.67	484,992	484,414	99.72
Delta	48,152	19,804,000	31,389,000	63.09	76,729	56,646	156,473	2,196,799	4,353,739	50.46	1,095,494	1,098,246	99.03
Eastern	202,527	92,332,000	156,824,000	58.88	431,315	252,017	1,170,889	11,431,307	22,479,390	50.85	4,653,560	4,615,089	99.05
Hawaiian	27,423	3,768,000	5,270,000	71.50	4,800	12,158	38,593	370,596	588,830	62.94	236,507	185,221	98.59
Inland	6,132	2,293,000	4,506,000	50.89	9,508	4,840	8,891	242,902	469,084	51.78	228,707	229,386	99.70
NCA	29,182	8,686,000	14,537,000	59.75	27,004	15,121	31,981	905,751	1,557,522	58.15	692,232	686,190	99.79
National	26,624	14,938,000	32,607,000	45.81	53,874	52,032	120,366	1,747,119	4,630,725	37.73	827,745	814,792	99.23
Northeast	25,945	4,829,000	9,577,000	50.42	8,064	5,128	24,990	473,949	962,781	49.23	299,718	318,838	92.75
Northwest	60,525	32,149,000	54,987,000	58.47	217,898	111,638	457,529	3,946,182	7,030,284	56.13	1,498,850	1,483,481	99.49
TWA	126,487	79,563,000	131,292,000	60.60	824,878	338,616	1,227,130	10,034,816	16,804,148	59.72	4,352,460	4,152,038	99.60
United	176,765	101,679,000	187,199,000	69.08	857,963	439,266	2,185,942	13,237,397	22,485,899	58.07	4,211,813	4,103,326	99.55
Western	25,764	9,115,000	16,828,000	54.17	22,586	15,931	39,344	949,556	1,822,087	52.11	487,515	473,664	99.66
TOTALS	1,271,534	568,673,000	914,816,000	62.18	3,559,438	1,880,888	5,545,310	70,596,532	125,447,076	56.27	27,339,623	26,678,626	99.28

## U. S. Feederline Revenues & Expenses for Jan.-March

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
All American*	\$ 258,207	\$ 6,641	\$ 248,765	\$ 2,607	\$ . . . .	\$ 10	\$ 174	\$ 315,335	\$ 158,041	\$ 157,294	\$ -57,128
Challenger	326,224	89,118	227,458	4,107	4,391	671	272	354,400	178,391	176,009	-28,176
Empire	218,403	62,195	154,065	885	. . . .	314	. . .	216,274	115,395	100,879	2,129
Florida	174,948	23,064	149,961	341	. . . .	118	. . .	301,945	165,833	136,112	-127,897
Monarch	326,136	66,769	253,365	1,319	2,991	324	90	384,305	195,951	188,354	-58,169
Piedmont	470,485	171,767	291,201	1,813	2,150	1,396	1,386	540,938	325,579	215,359	-70,453
Pioneer	746,602	290,767	418,569	2,140	3,228	2,149	9,939	719,606	367,879	351,728	26,996
Robinson	184,104	85,551	97,255	. . . .	1,691	187	140	264,451	135,679	128,772	-80,945
Southwest	525,790	193,836	317,367	2,864	7,993	653	2,357	564,390	292,186	272,203	-38,999
Trans-Texas	396,615	87,403	305,889	1,386	1,083	414	. . .	510,234	284,331	225,902	-113,619
West Coast	272,359	84,650	186,527	920	. . . .	161	175	312,304	150,122	162,182	-39,945
Wis. Central	234,881	27,081	203,314	1,872	. . . .	181	. . .	265,405	125,717	137,687	-28,524
TOTALS	4,133,854	1,188,442	2,853,936	20,254	23,527	6,578	14,533	4,747,587	2,495,104	2,252,481	-613,733
Los Angeles	105,861	. . . .	105,795	. . . .	Helicopter Mail Service	. . . .	. . .	81,513	45,300	36,213	24,348

\* Started passenger service on March 7, 1949.

NOTE: Under CAB filing procedures, the airlines file a cumulative quarterly financial report for January-March in place of a separate report for the month of March. Traffic data, however, are reported separately for each month.

## U. S. International Airline Revenues & Expenses for Jan.-March

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	U. S. MAIL REVENUES	FOREIGN MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
American	\$1,071,649	\$ 925,860	\$ 23,560	\$ 18,865	\$ . . . .	\$ 99,641	\$ 14,118	\$ 5,091	\$ 960,851	\$ 489,094	\$ 471,757	\$ 110,798
Amer. Overseas	4,441,089	2,436,421	920,193	422,867	443,452	. . . .	41,450	160,376	5,327,557	2,558,964	2,768,593	-886,468
Boeing	657,005	334,859	290,201	2,438	. . . .	16,712	9,622	. . . .	673,400	343,152	330,247	-16,395
C & S	886,183	482,321	362,758	1,360	. . . .	26,871	12,589	. . . .	744,274	354,499	386,775	144,909
Eastern	297,582	191,146	94,200	. . . .	. . . .	10,869	1,364	. . . .	401,229	182,004	219,225	-103,646
National	307,038	177,689	9,035	. . . .	. . . .	26,068	3,282	. . . .	216,748	113,899	102,849	-9,710
Northwest	746,720	276,129	19,442	. . . .	25,877	. . . .	5,203	10,070	317,368	140,006	117,362	29,352
Panagra	3,002,533	1,105,245	1,406,117	95,077	8,575	371,744	23,703	. . . .	2,944,950	1,304,763	1,640,187	57,583
Panama	4,343,918	2,941,404	777,036	189,073	303,317	. . . .	96,970	9,823	3,777,853	1,730,308	2,047,545	566,045
Pan American	17,536,535	10,173,249	4,451,241*	404,558	1,918,956	. . . .	321,651	50,824	16,420,316	7,087,027	9,333,290	1,116,218
Latin Amer.	11,147,142	5,001,636	4,587,769*	403,873	804,296	. . . .	133,383	156,003	10,246,614	4,847,645	5,398,969	900,528
Atlantic	8,373,686	3,917,156	3,594,314*	244,355	564,815	. . . .	66,897	4,200	7,871,573	4,158,840	3,712,733	502,113
Pacific	1,244,856	425,869	657,318*	. . . .	158,377	. . . .	2,299	. . . .	1,167,508	581,208	626,300	77,348
Alaska	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .
TWA	8,635,802	4,507,396	2,267,293	705,269	792,135	. . . .	159,321	152,872	8,809,442	4,351,580	4,457,862	-173,640
United	1,033,144	781,239	1,353,180	. . . .	17,607	. . . .	155,006	12,550	920,138	506,079	414,060	113,006
TOTALS	63,224,882	33,678,621	19,533,657	2,657,755	5,037,407	511,905	906,858	561,809	60,796,821	28,709,068	32,087,754	2,428,061

\* Represents company's estimate of amount which should be received in accordance with terms of the Civil Aeronautics Act when permanent rates are established. Estimate exceeds temporary rates in effect and permanent rates under review as follows:  
 Latin American Div. \$3,306,241; Atlantic \$2,863,255; Pacific \$502,003; Alaska \$340,017

NOTE: Data in above tabulations were compiled by American Aviation Publications from reports filed by the airlines with the Civil Aeronautics Board. Figures for American Airlines include that carrier's service to Mexico but not to Canada; for Braniff to South America; & S to Havana; Colonial to Bermuda; Eastern to Puerto Rico; National to Havana; Northwest to Orient, and United to Honolulu. Operations of U.S. carriers into Canada are included in domestic reports to CAB, in accordance with CAB filing procedures.



## CUSTOM-BUILT SCALE MODELS

Precision constructed miniature models made for airlines, aircraft manufacturers and industrial designers. Ideally suited for engineering work and for personal and business gifts.

Any type model made on request . . . Prompt service on special rush, and priority orders . . . All work guaranteed . . . Firm bids given on all quotations.

Inquiries are invited and all data submitted is held in strictest confidence.



Shown above is an unretouched photo of the Douglas DC-3 model airplane built for a special commercial project. (Note clean lines and workmanship.)

CHRISTIE BATLAS & CO.

P. O. Box 160-W Morgantown, W. Va.

## New Helicopter Record

A new world's altitude record for helicopters was made in a Sikorsky S-52-1 piloted by Capt. Hubert T. Gaddis of the Army Field Forces. The height of 21,220 ft. beat the previous Sikorsky record of 19,167 ft. established Feb. 10, 1947 in a Sikorsky H5G.

The record setting flight was made May 21, but announcement was delayed while the NAA checked the sealed barographs carried to record the actual altitude attained.

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## Classified Advertising

The rates for advertising in this section are as follows: "Help Wanted," "Positions Wanted," "Aircraft Wanted or For Sale," and all other classifications \$1.00 a line, minimum charge \$4.00. Estimate bold face heads 30 letters and spaces per line; light body face 40 per line; box numbers add two lines. Terms, cash with order. Forms close 20 days preceding publication date. Rates for display advertisements upon request. Address all correspondence to Classified Advertising Department, AMERICAN AVIATION PUBLICATIONS, 1025 Vermont Avenue, N.W., Washington 5, D. C.

### HELP WANTED

#### NEED A PILOT?

#### NEED A JOB?

Are you qualified to fly the Atlantic, to instruct, to fly charter, to dust, or to help organize a new airline? We can help you find the job you need, or the man you need. No registration fee. **PILOTS EMPLOYMENT AGENCY**, Box 152, AA-7, Whippany, N. J.

**EXTRA MONEY**—Airline employees are making substantial sums in their spare time as subscription representatives for **AMERICAN AVIATION**. A few good territories still available on exclusive basis. Write for details. Circulation Manager, **AMERICAN AVIATION**, 1025 Vermont Avenue, N. W., Washington 5, D. C.

### HELP WANTED

#### "INDUSTRIAL PILOT"

Large N. Y. corporation wants pilot for Grumman Wildcat amphibian. Must be married and have extensive experience this type of aircraft; also instrument proficiency and rating as well as three years' experience scheduled air transportation. Position permanent, minimum amount of travel away from home. Include adequate references in replying. Box 665, **AMERICAN AVIATION**, 1025 Vermont Ave., N. W., Washington 5, D. C.

**For Rent:** 120' x 100' steel, insulated, heated hangar with 20' x 100' leanto at Class 3 airport with 4,000 foot hard surface runways located within 20 minutes flying time from Washington or Baltimore. Ideal location for fixed base operator. Gasoline concession available if interested. Contact: S. J. Mannette, Cities Service Oil Company, Box 148, Easton, Maryland.

## FOR SALE

**4 BEECHCRAFT D-18-C(T) - CAR 04b**

**1 BEECHCRAFT D-18-S - CAR 03**

**4 CONTINENTAL R9A ENGINES**

Overhauled, Pickled and Boxed

**1 PRATT & WHITNEY R-985 - 14-B**

Drilled for Hydramatics

Aircraft and Engines low time since major overhauled—Polished—Waxed. In near new condition. Licensed spring 1950. Engine and Instrument Overhaul Shops—Signal Generators, ARC-T's, MN-26-K's, Marker Beacons, Link Trainer, Beech spares.

- Aircraft approved —4500 hrs. between overhaul
- Engines approved — 700 hrs. between overhaul
- Propellers approved—1400 hrs. between overhaul

This excellent equipment permitted over 3 million passenger mile accident free air carrier operation and the highest schedule completion (99.6%) of ANY certificated airline in the world—Contact . . .

Joseph L. Dyer  
**FLORIDA AIRWAYS, INC.,**

M. D. Holman  
Box 591, Orlando, Fla.

## FOR SALE!

**DC-4 (C-54-B-DC) 50-PASSENGER AIRPLANES**

**\$125,000<sup>00</sup> and up**

plus 2% sales tax



- Equipped with P. & W. R-2000-13 (2SD13G) Engines.
- Recently removed from scheduled passenger service.
- Standard airline interior.

**"AS IS" MUNICIPAL AIRPORT, TULSA, OKLAHOMA**

Address all inquiries to:

**AMERICAN AIRLINES, INC.**

Att: Director of Surplus Sales

43-02 Ditmars Boulevard, Astoria, Long Island, N. Y.

(Telephone RAvenswood 8-1000)

# LETTERS

## Air Coach Views Favored

To the Editor:

I read your editorial on "Public Convenience" in the June 1 issue and believe it to be one of the finest pieces written on the subject that I have read.

JAMES J. DAVIN, JR.  
United Air Lines  
New York, N. Y.

Some weeks back I spent untold hours writing 40 or 50 pages about the coach fare subject. Now I see you tell the story much more effectively in one or two pages.

C. W. JACOB  
V. P. & Asst to the  
President  
American Airlines

Your editorial, "Public Convenience," in the June 1 issue is one of the best I have ever read. You certainly deserve to be commended on the clear, concise, and logical manner in which you presented this matter to your readers.

HENRY MAZYCK  
TACA Airways System  
Chicago, Ill.

## Dissent

To the Editor:

This is not a crank letter. Nor is it a petulant demand for retractive comment in your magazine. It is nothing more than one man's modest effort to clear some of the smoke that clouds the issue of non-scheduled airlines generally and one in particular. Whether you print this commentary or not is relatively unimportant. But it may temper future comments by you along the lines presented in your editorial of June 1.

At the outset, I cannot quarrel with your discussion of trolley and inter-urban bus schedules. Beyond the fact that such vehicles move people, they have little in common with commercial airliners whether scheduled or not.

In the first place, buses and trolleys—described by you as public utilities—guarantee certain minimum services in return for exclusive franchise rights. No airline anywhere has ever attained the stature of a public utility in the legal meaning—and as a consequence, no airline in America has ever guaranteed or been asked to guarantee any minimum amount of service for any route city.

As a matter of fact, Chairman O'Connell of the CAB informed the Senate last week that the Board "never concerns itself with the number of schedules operated by a carrier unless that carrier operates more schedules than mail subsidies can cover." The Board has long protested over-scheduling. It has never censured under-scheduling. And towns like Quaking Rosebush, Nev., and East Overshoe, Vt., are on the routes of certified carriers only because those carriers expended vast sums in applying for those route stops. No one forced any airline to serve any city—at any time. If these route stops now prove unprofitable, it is only another indictment of the unrealistic management too prevalent in the airline industry.

No manufacturer could so badly forecast his markets as have the airlines—and still survive. A current example involves Peoria, Ill. Chicago and Southern fought hard to get this route stop. They are now fighting with equal sincerity—to get rid of this route stop. Apparently, it is the Board and not the airlines who worry about the great altruism of "public convenience."

As a director of Air America, I cannot help but appreciate your expressed sym-

pathy for a non-scheduled operator who obtains a permanent certificate between California and New York via 22 intermediate points, with the stipulation that each point receive service twice daily each way.

Air America's application for a certificate covering "second-class" passenger service embraces almost 20 intermediate points. Our certificate application will present cost sheets predicated upon twice-daily service. There is no dare we would rather accept than the hypothetical challenge which you pose. Being practical, however, it is unlikely that the Board would specify "two flights daily each way" because Air America has no desire to carry the mail—which is the only revenue load that has ever dictated minimums of service even in the feeder line certificates.

Obviously, this operation would require additional personnel—four times the number of people currently employed by Air America in its five stations. But Air America would still employ only 3 people for every 12 on the payrolls of presently certificated transcontinental carriers for the simple reason that most airline employees are engaged in non-flying chores which do not occur in "aircoach" service.

Undoubtedly, interline fares would pose a few problems. But when you consider that Air America has been putting 20% of its coast-to-coast "air coach" passengers on certificated airlines to points beyond Los Angeles and New York, it would not be a new problem. And we would expect at least some commission compensation for this sales service—which we now provide to scheduled airlines without any income and with considerable inconvenience.

Perhaps your concluding paragraph is unduly pessimistic. Air America has never suggested "scrapping" of any existing type of air service. It suggests only that available "air Pullman facilities" be supplemented with "air coach facilities." No Pullman trains have been "scrapped" to my knowledge—despite the prosperous broadening of coach services.

If all non-scheduled look alike, I can only point to the fact that Air America pays its pilots more than any domestic certificated carrier, already has two well-paid vice presidents and an extensive accounting department, and boasts a legal corps of undeniable strength. We have assumed most of the "headaches" of regular airlines. We ask now only to assume the "regularity" of regular airlines.

PAUL ANDREWS  
Wilson-Andrews Adv.  
Corp.

Beverly Hills, Calif.

(Editor's Note: Thanks to Air America's Paul Andrews for a stimulating letter. One statement of fact needs comment. It is true that some airlines are now endeavoring to abandon local stops which they fought earlier to obtain, but Mr. Andrews is not correct when he says no airline has ever had stops forced on it. Quite a few intermediate points have been added on CAB's own initiative without any request or even desire by an airline—and in every such instance, probably, the airline is serving the points reluctantly and at a loss. Without questioning Air America's ability to be an efficient and low-cost operator, we do doubt that it could operate a complete transcontinental service with only three persons for every 12 now on the payrolls of the present transcontinental operators.)

## Pioneer & Trans-Texas

To the Editor:

I have just now had an opportunity to read American Aviation of June 1, 1949, and under the section headed "Backgrounds & Trends," I note an item reading, in part: "CAB's show cause order to Trans-Texas Airways to give evidence why it should not cease operations in May, 1950, may have named Pioneer Air Lines to take over a major portion of TTA's routes, but Pioneer intends to work to keep its fellow feeder-line in business," says Robert J. Smith, Pioneer president.

I fear that you have been misinformed, because our position is, and has been different than this item indicates.

I have previously told Mr. James V. Allred, General Counsel for Trans-Texas Airways, Inc. that the position of Pioneer is:

1. We respect and admire Trans-Texas for the effort it has made. We know from our own experience that it is extremely difficult to finance a new airline venture; that the problems of securing competent personnel and satisfactory equipment seem at times impossible of solution; that the difficulties of initiating and safely maintaining a new type of service are most discouraging.

2. We sincerely regret that they have experienced such a disheartening blow as that produced by their order to show cause why their certificate should not be terminated on May 13, 1950. We can truly sympathize with them, for our order required us to show cause why route segments amounting to more than one third of our total route No. 64—segments on which operations had been conducted less than twelve months as of the date of the order—should not be terminated immediately, in one instance, and after twelve months, in another!

3. We will do nothing, and take no action designed to impair the efforts of Trans-Texas to show cause why its certificate should be renewed and extended.

4. We will, of necessity, respond to that portion of the order in Docket No. 3720 directed to us. In the event the Board decides to terminate the certificate of Trans-Texas, we will show the effect of adding the Fort Worth-Stephenville-Brownwood-San Angelo and Dallas-Palestine-Lufkin-Beaumont-Port Arthur-Galveston-Houston segments of its route to our route No. 64. We will present this showing as frankly and fully as we can.

I have never told anyone that Pioneer will work to keep Trans-Texas in business, nor will we. Conversely, we will not intentionally obstruct its efforts to remain in business.

ROBERT J. SMITH  
President  
Pioneer Air Lines

## No Maladies Contracted

To the Editor:

In your article on Faucett Airlines in the May 15 issue you referred to the lack of sanitation with regard to oxygen tubes used on trans-Andean flights.

Truly, Mr. Parrish, such injustices! Hasty visual judgment is unfair but to report it actually without being cognizant of the entire situation just isn't cricket. Needless to say, I'm quite happy to see you are in good health. No obituaries, no contracted maladies.

For your information, all oxygen tubes are boiled after each use. As with any new enterprise, a source of supply must first be established. Such a small item as a tip for oxygen tubing requires more time to obtain than you would imagine. If you were to take a bacterial count of one of our oxygen tubes, compare it with a glass which you have used, 2 to 1 you'll find you're jeopardizing your health repeatedly.

The tips have finally arrived. Now, quite sterile, each neatly wrapped in cellophane. On your next flight down here don't burden yourself with either penicillin nor streptomycin.

IRENE KACZANOWSKI, R. N.  
Supt., Flight Service  
Compania de Aviacion "Faucett," S.A.  
Lima, Peru

(Editor's Note: Most humble apologies! Congratulations to Faucett's service for boiling oxygen tubes after each flight and the new addition of cellophane-wrapped tips. Health perfect, not even a cold.)



*Stratofreighter over Berlin rooftops approaching Tempelhof Airport*

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An exceptional feat, but not for the 14,000 horsepower Stratofreighter. Despite the great loads, this big 340-

mile-an-hour transport found no difficulty in coming in over the 5-story buildings flanking Tempelhof Airport, and stopping in less than two-thirds of the field's 5,300-foot runway.

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Boeing is now building for the U. S. Air Force 50 improved model C-97A's, recently approved for operation at a new gross weight of 148,000 pounds. Their

two altitude-conditioned decks can carry 143 fully equipped troops or up to 26½ tons of freight—even tanks and heavy guns. In these planes America has the fastest, most powerful, most efficient air cargo carriers in the world.

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